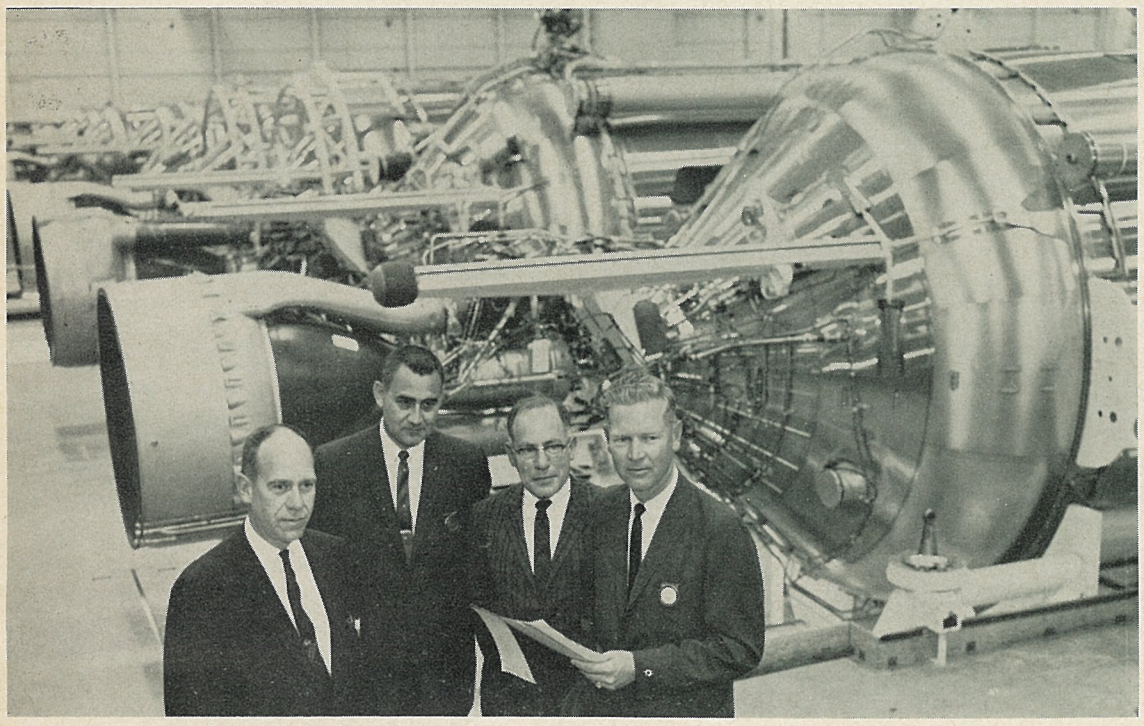
GD

ASTRONAUTICS EDITION
(OFF-SITE)

GENERAL DYNAMICS NEWS

VOL. 14, NO. 19 PUBLISHED BY GENERAL DYNAMICS CORPORATION WEDNESDAY, SEPT. 13, 1961



IN SPOTLIGHT—This quartet of GD/Astro executives, plus W. H. Patterson, vice president—advanced project planning, will appear tonight (Sept. 13) as panel before Astronautics Management Club. From left, they are, E. D. Bryant, vice president—operations; W. W. Withee, vice president—research and engineering; Mortimer Rosenbaum, executive vice president; and J. R. Dempsey, president. They are shown on Atlas final assembly line.

Depts. Formed, Titles Change in Organization Shift

Several organizational changes and personnel appointments at General Dynamics/Astronautics have been announced by J. R. Dempsey, president.

Concurrent with the changes; new departments have been created and some departments eliminated, with some shifting of areas of responsibility among key supervisory personnel. All changes are effective immediately and transfer of personnel to fill departmental assignments are being made as necessary.

Under the new alignment, E. D. Bryant, vice president-operations, now has reporting to him:

Dept. 210 (operations estimating and forecasting), T. F. McCubbin, chief; Dept. 230 (scheduling), T. F. McAleer, chief; and Dept. 480 (operations planning and methods), H. L. Williamson, chief. These are in addition to ones now reporting to Bryant.

Now reporting to G. M. Robertson, director, management systems, are:

Dept. 153 (work assignment administration), administrator to be named; Dept. 154 (resources planning and control), J. K. Davant, manager, with resources planning, G. M. Coole, chief, and facilities control, A. M. Wrightson, chief, groups reporting to Davant; Dept. 155 (estimating), L. H. Boggess, manager; Dept. 101 (data processing), C. E. Diesen, manager; Dept. 151 (change administration), H. L. Ellsworth, manager; Dept. 152 (program planning and control), C. R. Walker, manager; Dept. 170 (organization and systems), M. F. McDonald, manager; and Dept. 175 (PACE management services), D. D. White, PACE program administrator.

Support administration (Dept. 305) has assumed responsibility for estimating, standards and performance reporting functions for product support department's support center.

Reliability control will now perform its own estimating, standards and performance reporting functions.

Barbecue Pits Prepared For 'Western Jamboree'

The swing of a square dance and the one-two of a waltz, barbecue prepared in open pits, and entertainment from the "Old West" are in store for General Dynamics/Astronautics Saturday (Sept. 16).

You'll find it all in the ARA Recreation Area at San Diego where a gala "Western Jamboree" will be unfurled under the stars.

Chefs under Roy Eastberg and Gil Hutter will begin barbecuing whole steers more than a day in advance. They will serve man-sized portions from 7 to 10 p.m.

Around 8 p.m. entertainment will get under way with specialty acts, "gun slingers," Indian "spirit" dancers and others performing at one of the tennis courts.

At 9 p.m. square dancers will converge on one of two large picnic shelters to whirl to the direction of guest callers. For those who prefer to watch, the Astro Nauts of ARA will give special exhibitions.

Meanwhile, at one of two tennis courts Buster Carlson and his popular 10-piece ARA Band will provide music for those who prefer the fox trot, waltz and the Latin tunes.

One tennis court, plus all individual picnic shelters in the area, will be open for those who like to "sit out" the evening under the stars.

Tickets for the event are available at all employee services outlets, dinner and dancing for $1.50 each. Dancing only tickets are at 50 cents each.

The event is sponsored by ARA's Women's Activities.



GOING WESTERN—All roads (and travel modes) lead to ARA Recreation Area Sept. 16 for gala outdoor barbecue and dance (both round and square). Here three key planners, Jean Bryan, Dixie Quesenberry and Bud Mecham, demonstrate various means that can be employed in coming to "Western Jamboree."

Dempsey Heads Panel Talk For Club Tonight

For the first time since Astronautics became a separate division of General Dynamics Corporation top management officials will appear as a panel for discussions.

The occasion is a meeting tonight (Sept. 13) of the GD/Astronautics Management Club slated for El Cortez Hotel in the new convention hall (if completed) or the Caribbean Room.

Sponsoring members of material department have billed this meeting as a "Blue Badge Turkey Talk."

Appearing on the panel will be J. R. Dempsey, president; Mortimer Rosenbaum, executive vice president; W. W. Withee, vice president — research and engineering; E. D. Bryant, vice president — operations; and W. H. Patterson, vice president—advanced product planning. F. J. Traversi, director of material, will be moderator.



W. H. Patterson

Special comment will be given on Astronautics' move into the space business and how it will affect the division. Management Club members have been asked to submit questions.

Entertainment will feature original cast members from Starlight Opera hits of the season.

Heading planning for this meeting, the first since a summer "layoff," will be E. R. Messer, entertainment; C. C. Farnsworth, raffle; L. H. Allen, tickets and dinner; and I. B. Jenkins, "pusher."

Atlases Launched From Both Coasts

Atlas 101-D launched Aug. 22 by Strategic Air Command crew from Vandenberg AFB. Impact in western Pacific.

Atlas 111-D launched Aug. 23 by Complex 12 GD/Astro crew at Cape Canaveral as part of space probe, Ranger 1. Atlas functioned properly, but spacecraft failed to achieve proper orbit.

'Merit Employment Policy' Proclaimed

By executive order, General Dynamics Corporation has reaffirmed corporate policy that "all persons shall receive equal employment opportunities in accordance with their individual job-related qualifications, without regard to race, creed, color or national origin."

The setting forth of detailed policy, called "Merit Employment Policy," is in line with national principles proclaimed by President Kennedy and the President's Committee on Equal Employment Opportunity.



Earl D. Johnson

"For General Dynamics, this is reaffirmation of a policy in effect for many years. As an employer we are interested in an individual's ability and aptitude, and qualifications for advancement," Earl D. Johnson, General Dynamics president, commented in approving the order.

Specifically, the Merit Employment Policy states that, "Equal opportunities include, but are not limited to, employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay and selection for training including apprenticeship."

Division executive heads are charged with implementation of Merit Employment Policy, and R. H. Biron, senior vice president-industrial relations, is responsible for providing policy guidance, coordination and necessary follow-up in interpretation, etc.

The policy provides for development of recruiting practices that "seek out qualified minority group candidates for openings in professional, technical, administrative and clerical positions, as well as factory-skilled and semi-skilled occupations and apprentices."

Saturday Hours Set For Salvage Yards

Salvage yards at GD/Convair and GD/Astro will be open for employee sales during the next four Saturdays on the following schedule:

GD/Convair—Sept. 16 and 30.
GD/Astro—Sept. 23 and Oct. 7.

Gates Named Guards Chief

A. C. Gates, a veteran of almost 15 years service in General Dynamics security operations, has been named guard chief at General Dynamics/Astronautics by W. E. Bowman, chief of industrial security.

Gates replaces J. M. Mernik who has left the company.

Before joining the General Dynamics/Convair guard force in 1947, Gates served more than nine years in the U. S. Navy, rising to the rank of chief warrant officer. In 1951 he became a guard lieutenant and for almost 10 years has served as a guard captain.

On March 9, 1953, Gates took over direction of security operations at Plant 2 when that installation was reopened by Convair.

'Dynamic America' Sales Start Friday

First copies of "Dynamic America" will go on sale at bargain rate to General Dynamics/Astronautics purchasers this Friday (Sept. 15).

The profusely illustrated volume of development of General Dynamics Corporation goes to employees for $7.50. Regular price is $20.

Books may be purchased directly at employee services at the main plant in San Diego. Sample books will be on display at off-site points where orders may be placed.



SECURITY APPOINTEE—A. C. Gates, veteran General Dynamics security officer, has been named chief of guards at Astronautics.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Aug. 28.

Dept. 101-1, Business Data Processing: To data processing supervisor, A. O. Gudmundson, B. W. Piper.

Dept. 146, Reliability Control Enigneering: To reliability group engineer, R. K. Hood, H. O. Story.

Dept. 305-0, Support Administration: To support planning and estimating asst. supervisor, C. L. Allen, G. L. Austin. To support task control asst. supervisor, J. P. Mial.

Dept. 322, Support Publications: To support publications supervisor, B. Szpyrka. To support publications asst. supervisor, F. W. Bouse, R. A. Dilworth, B. M. Downes, A. E. Lewis, E. P. Sitler, R. M. Trease.

Dept. 335-3, Support Logistics: To clerical asst. supervisor, W. W. Dugan.

Dept. 337-7, Support Logistics: To parts documentation asst. supervisor, J. S. Blaha.

Dept. 350-3, Support Center: To analysis and control asst. supervisor, L. D. Spurlock.

Dept. 351, Support Center: To field modification general supervisor, D. T. Barber. To support publications supervisor, J. C. Gordon, R. J. Wirges. To field modification group engineer, G. W. Hall, R. A. Mills. To manufacturing control asst. supervisor—base, D. L. Frank. To support publications asst. supervisor, M. D. Askay, R. W. Estus, R. E. Lee, W. C. Pundsack. To inspection asst. supervisor, C. L. Bowman, J. C. Boyman, C. M. Patterson. To manufacturing control asst. supervisor, P. R. Prichard.

Dept. 400-0, Tooling Administration: To tool engineering administration general supervisor, G. B. Branch, H. J. Sumner.

Dept. 401-2, Tool Planning: To tooling supervisor, N. B. Powell Jr.

Dept. 402-1, Tool Design: To tooling supervisor, R. R. Sodomka.

Dept. 403, Tool Engineering Project Section: To tooling general supervisor, R. C. Emerson. To tooling supervisor, L. C. Albright, H. M. Edwards, E. W. Stelmach.

Dept. 404-0, Tooling: To tooling general supervisor, W. T. Lacy.

Dept. 521-6, Engineering Administration: To engineering services asst. supervisor, L. W. Buser.

Dept. 539-2, Design Liaison: To asst. design group engineer, D. W. Hale.

Dept. 597-5, Engineering Development: To asst. weight group engineer, J. A. VonDerWische.

Dept. 600-0, Base Activation: To activation project supervisor, W. Bailey Jr.

AFMTC

Dept. 571, GD/Astronautics Operations: To asst. foreman, W. B. Sullivan.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch complex asst. supervisor, M. B. Cottrell, J. W. Moss. To timekeeping asst. supervisor, J. L. Short. To activation engineering asst. supervisor—base, G. W. Smith Jr. To inspection asst. supervisor, D. C. Cox, J. A. Hudson. To asst. foreman, C. H. LeClerc.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To production control foreman, K. W. Fitch. To MAB supervisor, J. R. Profit Jr. To MAB asst. supervisor, A. L. Brady. To activation engineering asst. supervisor—base, D. H. Brown. To inspection asst. supervisor, W. L. Klepper. To asst. foreman, J. D. Roberts.

EDWARDS RS

Dept. 575, GD/Astronautics Operations: To guard lieutenant, A. A. Coleman.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To cost control supervisor, C. L. Kellerman. To timekeeping asst. supervisor, D. E. Carpenter. To inspection asst. supervisor, C. E. Lester, G. H. Townsend, K. F. Reed.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To task control supervisor—base, A. E. Divine. To receiving and stores asst. foreman, G. T. Booroom. To asst. foreman, E. L. Dickson, R. J. Hartman, R. L. Howard. To activation engineering asst. supervisor—base, J. T. Holmes Jr. To timekeeping asst. supervisor, E. Lorton. To sub-contract coordination asst. supervisor—base, J. W. Watts. To launch complex asst. supervisor, K. B. Malewicz.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To foreman, W. L. Johnson. To asst. test conductor, C. W. Koberg, R. I. Smith, R. V. Woodle. To asst. foreman, V. D. Brose, L. L. Corey, A. P. Kubaneck.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To foreman, B. A. Gallaway. To asst. foreman, T. L. Tucker. To inspection asst. supervisor, P. L. Cook, M. A. Hunter.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To chief of material—base, W. R. Williams. To launch complex asst. supervisor, K. B. Clark.

Service Emblems

ASTRONAUTICS

Service emblems due during the period Sept. 1 through Sept. 15.

Twenty-five-year: Dept. 831-1, P. F. Grijalva; Dept. 840-0, J. M. Jones.

Twenty-year: Dept. 131-1, Lois P. Cumberledge; Dept. 193-3, P. T. Brass; Dept. 214-1, K. E. Harris; Dept. 343-1, R. T. Mulroy; Dept. 401-2, J. J. Severy; Dept. 522-4, J. M. Lawyer; Dept. 547-3, W. C. Geopfarth; Dept. 578-1, S. N. Laverents.

Fifteen-year: Dept. 811-1, A. W. Lizarraras.

Ten-year: Dept. 110-0, Thomasena B. Wells; Dept. 130-1, G. L. Finley; Dept. 220-2, V. M. Salazar; Dept. 270-3, G. H. Livermore; Dept. 335-2, R. M. Nicholas; Dept. 337-3, Helen A. White; Dept. 342-3, Andrew Buerkle; Dept. 344-0, W. T. Green; Dept. 401-5, F. C. Cornish; Dept. 541-3, C. P. Merriman; Dept. 549-0, B. B. Wygant Jr.

ALTUS AFB

Twenty-year: Dept. 617-0, J. G. Miller.

EDWARDS RS

Ten-year: Dept. 575-0, R. B. Merwin.

FAIRCHILD AFB

Twenty-year: Dept. 613-0, H. L. Sterling.

LINCOLN AFB

Twenty-year: Dept. 616, R. C. Firestine.

SCHILLING AFB

Ten-year: Dept. 615-8, C. C. Chapman.

SYCAMORE

Fifteen-year: Dept. 573-0, C. W. Graser.

WARREN AFB

Ten-year: Dept. 611-6, P. R. Merritt.

Births

MAIN PLANT

DAVILA—Daughter, Amada Yalanda, 4 lbs., 6 oz., born Aug. 11 to Mr. and Mrs. Edward Davila, Dept. 451.

GALLAGHER—Son, Andrew Christopher, 7 lbs., 1 oz., born July 28 to Mr. and Mrs. W. C. Gallagher Jr., Dept. 322-4.

HEITMAN—Daughter, Lori Lyn, 7 lbs., 13½ oz., born Aug. 17 to Mr. and Mrs. R. R. Heitman, Dept. 220-4.

Deaths

MAIN PLANT

ELLIS—Charles C., Dept. 321-7. Died Aug. 26. Survived by mother, Edna L.

LINCOLN AFB

KEYSER—Arlyse J., Dept. 616. Died Aug. 26. Survived by daughter, Mora Ellen, 11.

VANDENBERG AFB

ANDERSON—Samuel H., Dept. 576-4. Died July 26. Survived by daughter and son.

General Dynamics NEWS

Successor to "Convairiety" (which for 13 years served plants of the former Convair Division of General Dynamics Corporation), West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

Approximate current total circulation, over 70,000.

Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRowning 7-8900, ext. 3322. Staff: Bryan Weickersheimmer, news editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

City College Courses Begin, Tuition Low

Fall San Diego City College courses, offered before and after work hours for first and second shifters, opened this week at General Dynamics/Astronautics.

Taught in Bldg. 17 and Bldg. 4 facilities of educational services at the main plant, the courses will be open to new students for a limited time. Students may enroll by calling Doris at ext. 1933 or by attending specific classes. Total cost per class is $1.50. Some classes carry City College credit.

Blueprint Reading is offered from 4 to 6 p.m. Monday and Wednesday and Tuesday and Thursday; and from 2 to 4 p.m. on Tuesday and Thursday.

Basic Electronics will be taught from 2 to 4:30 p.m. on Monday and Wednesday; 5 to 7:30 p.m., Tuesday and Thursday; and 4:30 to 7 p.m. on Tuesday and Thursday.

Electronics may be taken from 4 to 6:30 p.m., Tuesday and Thursday and 4:30 to 7 p.m. on the same days.

Numerical Control #1 meets from 5 to 8 p.m. each Tuesday. Advanced or Numerical Control #2 meets from 5 to 8 p.m. on Wednesday.

Optical tooling is offered from 4 to 6 p.m. on Tuesday and Thursday and A/C Shop Math from 4 to 6 p.m. on Tuesday and Thursday.

All courses are taught by GD/Astro instructors.

Heller Elected SPA President

W. B. Heller of General Dynamics/Convair systems and procedures (Dept. 8-4) assumed duties as president of San Diego Chapter of Systems and Procedures Association at first meeting of the 1960-61 year last night (Sept. 12).

Other General Dynamics men serving as officers during the current year are J. J. Ireland, GD/Convair Dept. 8 supervisor, vice president; and Ward Soulé of GD/Astronautics systems and procedures, secretary.

Heading committees are five GD/Astro men: James W. Burns, B. S. Gamson, R. M. Hanna, J. A. Moore, and P. D. Neiswender.

Anyone interested in attending meetings, either as visitors or as members, may obtain information from any of the General Dynamics personnel, said Heller, who may be reached at ext. 2241, Plant 1.

Composite Co. Open To Navy Reservists

General Dynamics employees in the San Diego area who are members of the Navy's inactive reserve are being invited to train with Naval Reserve Composite Co. 11-1.

Lcdr. Fred Jaeger (AF employee at Astronautics) is heading the drive for new members. Open to all ranks, rates and classes, Co. 11-1 meets at 7 p.m. each Wednesday at the Naval Reserve Training Center, off Harbor Drive. Call Jaeger at ext. 3174 for details.

Keith Clark Named Publications Chief

Keith R. Clark has been appointed General Dynamics/Astronautics chief of support publications by E. A. Reynolds, director of product support. He relieves G. R. Spitzer who has left the company.

Clark was born in Canada and came to this country as a child. He is a graduate of Wesleyan University, Middletown, Conn.

Before joining GD/Astronautics this February as support publications general supervisor, he was with the Martin Company, Baltimore, Md.



PROCUREMENT—Key men in GD/Astronautics' procurement activities compare notes. Seated at left is F. J. Traversi, director of material, and seated right is C. G. Keach, manager of procurement. Others, from left, are D. D. Knapp, C. T. Talbot and W. S. Tucker, general purchasing agents. Latter is new appointee.

Procurement Duties Reassigned; Tucker New Purchasing Agent

Appointment of a new general purchasing agent and reassignment of responsibilities within procurement operations at General Dynamics/ Astronautics have been announced by F. J. Traversi, director of material.

W. S. Tucker is the new appointee.

Tucker, C. T. Talbot and D. D. Knapp, also general purchasing agents, report to C. G. Keach, manager of procurement.

Tucker is now responsible for three purchasing agents and their respective groups. Included are J. C. Dingham for aerospace ground equipment, specification control items and cable assemblies; J. B. Gerding for outside production and research and special projects; and E. J. Bryant for cryogenic and Centaur systems and depot repair.

Knapp has taken over activities associated with procurement for base activation. Reporting to him are C. K. Murray, purchasing agent for operational base activation procurement; and I. T. Emley, purchasing agent for research and development bases and trainer base activation.

Talbot's organization remains the same with C. C. Farnsworth, purchasing agent for raw materials, hardware, supplies, equipment, technical data, facilities, leases and services; R. W. Harris, purchasing agent for electronic and electrical components; and R. E. King, purchasing agent for propulsion, pneumatic and hydraulic components and spare parts.

Toastmasters Set Election

Convair Toastmasters #457 will elect a new slate of officers at their next Monday (Sept. 18) dinner meeting in the Convair cafeteria executive dining room.

Andrew Gormish and Keith Blair, as nominating committee, will present nominees for club posts.

Tom East (Dept. 6) will be toastmaster during the evening's program centered around the main theme, "Education."

At next week's regular session Sept. 25 Bill Duerksen will assume toastmaster duties with speeches to deal with the military situation, domestic and foreign.

Convair Toastmasters and their guests will be attending the Area 5 award banquet Sept. 30 at Mission Valley Inn. Best club in the area will be named at that time by Gormish, Area 5 governor.

Reservations are to be made through Gormish, ext. 2272, Plant 1. Dinner is $3.25 each. A cocktail hour will precede the 8 o'clock banquet and program.

BASE ACTIVATION POSTS APPROVED

Organizational changes within base activation departments at General Dynamics/Astronautics have been announced by J. R. Dempsey, president.

E. J. Huntsman has been named base activation manager for both "E" and "F" series Atlas operational bases.

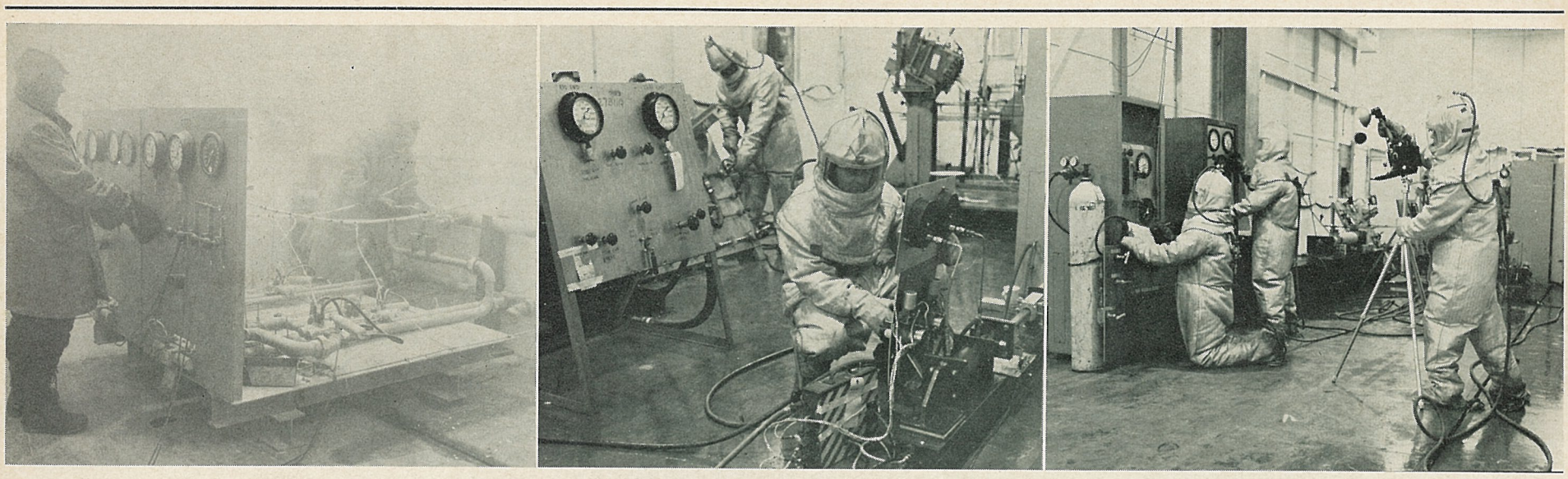
Activation and operations planning (Dept. 606) has been shifted to tooling department with C. C. Pope, general supervisor, reporting to G. A. Grossaint, superintendent of tool engineering.

Activation tooling under A. E. Williams, supervisor, also moves to tooling under H. J. Sumner, general supervisor, tool design and control.

Activation projects (Dept. 604) and activation operations (Dept. 605) are now under J. S. Harrison, base activation administration manager.



NEW POSTS—Larry Lawson (left) of GD/Convair and Art Wood of GD/Astronautics assume new positions as vice president and president of San Diego Area Council, National Management Association, at first officers' meeting last month. Both are past presidents of respective division Management Clubs.



WEATHER GAMUT—"Shroud environmental chamber" permits GD/Astronautics to produce variety of weather extremes. In center photo, high humidity (over 95 per cent) is achieved, while at left parka-clad technicians manipulate valves at 65 degrees below zero. At right GD/Astro Lensman Walter Gault dons "hot suit" for photo assignment. Incidentally, if desired, chamber can "rain" at rate of five inches an hour!

Unique 'Gas Freezing' Know-How Developed by GD Engineers

Feasibility of a revolutionary method of eliminating rocket gases from chambers which simulate the conditions of outer space was developed by General Dynamics/Convair engineers during a year-long subcontract just concluded for its sister division, General Dynamics/Astronautics.

This work, which has resulted in recent modification of General Dynamics/Astronautics huge space chamber, will duplicate the environment of outer space. The cryogenic pumping system, as it is called, will, when put in use, eliminate all the gases emitted during the dynamic testing of small rocket engines within the chamber. This permits rocket engine operation in the simulated low pressure of outer space.

"Results of this work place General Dynamics/Convair's knowledge in the cryo-pump area ahead of the space chamber industry," said C. L. Jackson of General Dynamics/Convair who headed this program.

"The challenging engineering aspects in development of this system made the task particularly inviting. Further, it offered General Dynamics/Convair an opportunity to increase its technical capability in this rapidly expanding cryogenic field," he continued describing the orginal contract. This was obtained for General Dynamics/Convair through a perimeter engineering sales effort in the spring of 1960.

"Although the principle of cryo-pumping is not new, application of the cryo principle for removing large quantities of gas from a relatively low pressure region on such a large scale has never before been accomplished," he said.

(The cryo-pump principle is the freezing of gases into ice thereby creating an evacuated area.)

Present modification of the chamber, completed last month, does not so far include the cryo-pumping system, but design provisions are such that modifications can be made incorporating the cryo-pump capability at any time, he explained.

Modifications as they now stand, add a 5,000-gal. insulated storage tank for liquid nitrogen, provision for liquid hydrogen, a cold wall within the chamber, the automatic operational control system, and all interconnecting systems.

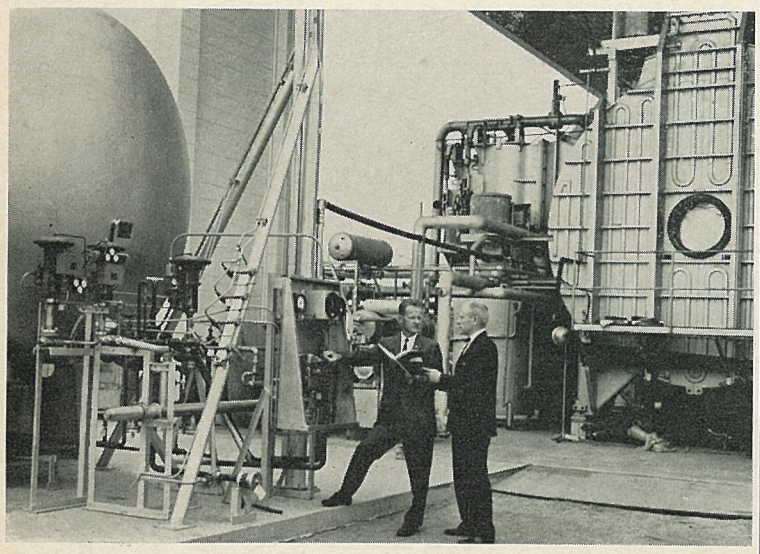
"The facility now provides an environment of very low pressure and cold of outer space, and the solar radiation of the sun—conditions like those found at high altitudes (up to 100 miles). The liquid nitrogen pumped through the cold wall lining brings the temperature in the chamber to as low as —320-degrees F. When liquid hydrogen is used it will produce a temperature of —420-degrees F.," said O. O. Haroldsen of General Dynamics/Astronautics aerophysics laboratory which directs space environment testing.

"One of the most remarkable achievements in the entire program was fabrication and installation of the cold wall assembly inside the vacuum chamber. This work involved some 600 weldments and connections within the evacuated area, which when exposed to high vacuum during initial tests, operated with zero leakage. This is very much like building a prototype airplane which required no changes after its first flight test," said Jackson after checkouts of the new installation. This fabrication and installation was done by experimental factory under the direction of N. R. Keough, general foreman, and John Wasem, assistant foreman.

When this project was first initiated a year ago at General Dynamics/Convair, Jackson was given divisional responsibility to head an internal project team. Key members were: J. W. Anderson, engineering technical; M. A. Grove, material; N. O. Loven and R. H. Hurd, engineering design; Keough, manufacturing; H. A. Smith, plant engineering; T. P. Solberg, accounting; E. J. Steeger, engineering test; G. R. Vetter, contracts. R. E. Pearce of engineering assisted Jackson throughout the program.

Haroldsen monitored design, development, and installation at the Astro site.

Credit is due all team members for success of the program, said Jackson.



SPACE ADVANCE—C. L. Jackson of GD/Convair and O. O. Haroldsen of GD/Astro inspect equipment recently installed by GD/Convair at GD/Astro's Kearny Mesa research laboratory site to advance capability of huge space chamber (far right).

Coast Will Return To Standard Time

California plants of General Dynamics Corporation will return to standard time the last Sunday in September (Sept. 24). Clocks will be put back an hour at 2 a.m. of that day.

Hustler No. 21 'Graduates' to Striking Force

Production conversion B-58 No. 21 joined 43rd Bomb Wing's tactical striking force this month following a successful four-hour acceptance flight.

Lt. Col. W. R. Griner, pilot; Capt. R. E. Simmon, bombardier-navigator; and Capt. P. P. Markum made the flight to Carswell AFB.

Another production conversion Hustler—No. 27—completed company flights this month and was being readied for Air Force acceptance flights.

No. 27 is scheduled for delivery to 43rd Bomb Wing in September. This will bring the conversion program to a halt "for the time being."

No. 22, last of the test Hustlers slated for conversion to tactical status, is still being used by Air Force at Edwards AFB to demonstrate flight characteristics using the two-component pod. A return date has not been established.

Thus, delivery of No. 27 this month virtually winds up the conversion program—on schedule.

"Splendid cooperation from Dept. 63 supervision, quality control and Air Force people, and from personnel in departments involved is helping us to finish on schedule," said C. N. White, superintendent B-58 product field operations.

DEANE DAVIS CITED FOR 'PROJECT SCORE'

An Air Force citation for his part in "Project Score" has been awarded Deane Davis, General Dynamics/Astronautics chief project engineer for Centaur.

The "Score" project involved the "talking satellite" which broadcast President Eisenhower's Christmas message in 1958.

The citation, presented by Lt. Gen. Bernard A. Schriever, Commander, Air Force Systems Command, praised Davis' "outstanding technical ability, inspiring leadership and selfless devotion to duty," and stated that his accomplishments "reflect great credit upon himself and his company."

GD/Astro Son Tapped For Naval Academy

A presidential appointment to the U. S. Naval Academy, Annapolis, Md., has been received by John Paul Grando Jr., son of GD/Astro's J. P. Grando, Dept. 141-1.

Young Grando will graduate from Kearny High School next June, and report to Annapolis a few days after his 18th birthday in July. His father, who retired from the U. S. Marine Corps as a captain, is a former Marine aviator.

Astro Technicians Don 'Hot' and 'Cold' Costumes For Weather Testing

Silo launch equipment similar to that being installed in Atlas bases across the nation recently ran a gamut of weather conditions in a week-long series of tests conducted by General Dynamics/Astronautics.

The test items, with support equipment to help them duplicate their normal functions, were alternately cold (minus-64°), hot plus-165°), and humid (95 per cent) in an around-the-clock 15-test program conducted at the Point Loma Test Site, San Diego.

Tests were held in GD/Astronautics "shroud environmental chamber" which is large enough to test an entire Atlas missile and its handling trailer, but is also utilized for component testing.

Behind the program were Air Force qualification tests to prove the parts being tested would stand up and operate under extremes beyond those normally encountered at launch site. To be answered were such questions as: would lubricants perform equally well in sub-zero temperatures and extremes of heat and humidity? Would the expansion and contraction of metals under these conditions alter the part's effectiveness? Would gaskets continue to function under varying conditions?

To perform the tests, GD/Astronautics technicians were forced to move into the chamber and operate equipment. They wore foul weather gear for cold and special asbestos suits complete with air lines for cooling and breathing under conditions of intense heat and humidity.

Jay Lynch, test engineer, and Julian Gotkiewicz, both Dept. 565-3, conducted the program.

R. C. Hinck, Dept. 566-1 group engineer, heads Point Loma operations, with William Valentine, foreman; Jim Thornton and V. H. Lowe, assistant foremen, both Dept. 756, in charge of environmental testing.

Mfg. Research Team Attacks And Solves Production Hitch

In addition to the steady stream of new devices and techniques constantly evolved by General Dynamics/Astronautics applied manufacturing research and process development (Dept. 290), the group is often called upon to investigate production trouble spots.

A capable staff of Dept. 290 specialists in electronics, welding, metallurgy, chemicals, plastics, materials and packaging stands ready for consultation to expedite achievement of efficient, on-schedule production.

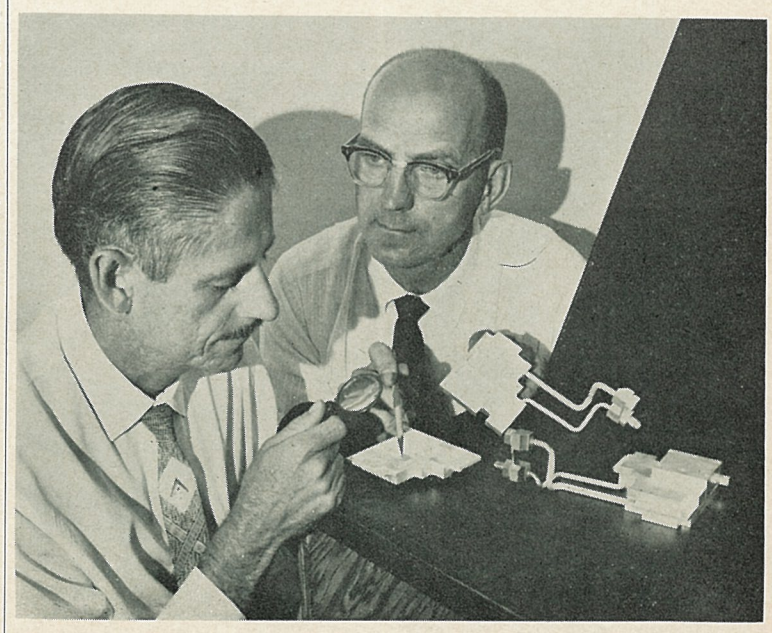
Recent example of the service provided is seen in the case of an electronic component for GD/Astro's Azusa tracking system.

An electrolytic copper water jacket component for Azusa was electroplated with silver prior to final assembly. It was noted that the silver plate had a tendency to peel off during subsequent soldering operations. Production ground to a halt, and a team from applied manufacturing research and process development tackled the problem. They recommended that the component be plated with a thin layer of nickel before the silver plating stage.

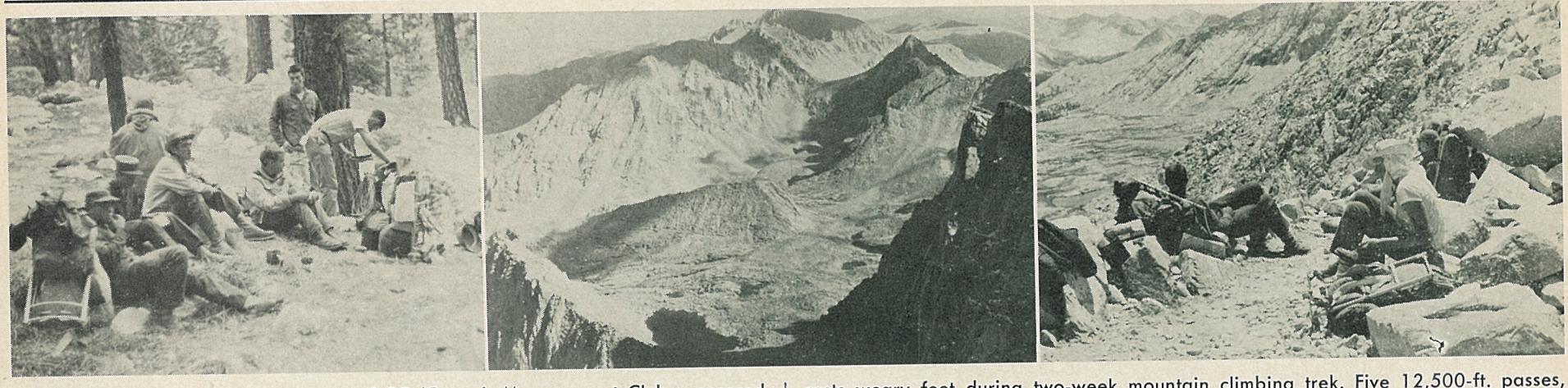
The peeling problem was eliminated.

But study did not stop there. At present, extensive research is being pursued on a process of silver brazing to replace the soldering step.

Goal? A more reliable product.



CLOSE LOOK—Ozzie Sotirhos, GD/Astro materials process engineer, examines plated water jacket component as C. P. Rolla, Dept. 290, explains how applied manufacturing research team solved plating problems on item.



STEEP TRAIL—Young mountaineers of GD/Convair Management Club-sponsored Explorers Squadron 340 assemble packs (far left) and take breather before daily onslaught on rugged High Sierra mountain passes (center). At right, trail break rests weary feet during two-week mountain climbing trek. Five 12,500-ft. passes, some inaccessible without ropes, were scaled. Day's stints averaged 5 to 15 miles, depending upon heights attacked.



PREVARICATING PAT—Lie-detector needles danced dizzily when pretty Pat Pierce, GD/FW Dept. 8, answered "yes" to question: "Are you Doris Day?" Interrogator is L. D. Criswell of GD/FW Dept. 28, polygraph expert.

To Tell the Truth

Part-Time Polygraph Hobbyist Says Even White Lies Don't Pay

A lie-detector does lie—but not very often—according to L. D. Criswell, General Dynamics/Fort Worth process analyst and part-time polygraph expert.

"Mental cases, alcoholics and dope addicts can sometimes fool the machine because their nervous systems differ from the normal person's," Criswell said.

"But the normal person has no control over his nervous system, and when he's not telling the truth it shows up on the machine as increased blood pressure or blood flow, or a change of heart beat."

A few individuals, improperly questioned, are capable of rationalizing a "correct" answer.

"When a suspect in a murder case answered 'no' to the question 'did you kill your girl friend, Mary?'" the machine showed him to be telling the truth. But the man was later convicted on overwhelming evidence."

How did he "outwit" the polygraph? "Well," the convicted man admitted, "at the time of the murder, I had two girl friends named Mary."

Pathological liars, people who delude themselves into believing their own untruths, have also been known to fool the machine in rare cases.

But these are exceptions. Approximately 97 per cent of all people cannot fool the machine with the tiniest "white" lie.

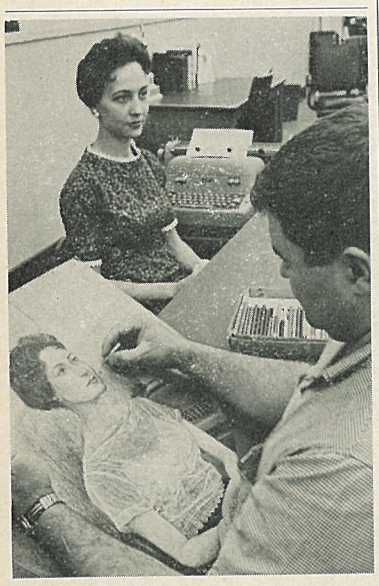
His interest in this hobby dates back to 1947, when he and about 500 other Atomic Energy Commission security officers were routinely tested.

Nowadays, his work in the field is limited to frequent calls from county officials and occasional demonstrations, which often produce interesting results.

At a Lion's Club demonstration he asked a young lawyer who spent much of his spare time filing income-tax returns, "Have you ever fudged a little on an income tax return?" The answer literally put the delicately balanced lie-detector out of commission!

While many of Criswell's efforts have helped establish innocence, his altruistic efforts sometimes backfire.

Criswell worked many months to set up a test for a life-termer who incessantly claimed his innocence. "The man was so convincing it took almost an hour to decide he wasn't telling the truth," he said.



LUNCH PORTRAIT—Carl Ronald Thomason, GD/FW Dept. 6 engineering illustrator, is also gifted portrait painter. Above, he completes color portrait of Roberta Chisolm, secretary, during lunch period.

ALLWARDT TRANSFERS TO ASTRO DIVISION

V. L. Allwardt, chief of engineering flight test at General Dynamics/Convair, has transferred to General Dynamics/Astronautics, effective last week.

Allwardt joined Convair division in flight research in 1943 and moved to Edwards AFB as flight test group engineer at the Convair facility in 1953. He was chief flight test group engineer there from 1955 until he succeeded G. E. Putness as project manager two years later.

He returned to San Diego in late 1959 as senior flight test group engineer in the commercial transport program.

'Thrilling'

Plane Piloted To Safe Stop In Vacant Lot

"Really thrilling," is the comment of Hans Busch, General Dynamics/Astronautics task control planner (Dept. 521-2), who brought his disabled aircraft in for an emergency landing in a vacant lot recently.

But when Busch says it, he refers not to the hair-raising landing, but to the response of bystanders — perfect strangers — who helped prepare the ship for its return to the airfield.

The adventure started shortly after noon on a Sunday. Busch had lifted his Stinson Voyager from Montgomery Field and climbed to 400 feet when the engine suddenly slowed to idle speed.

"I advanced the throttle and applied carburetor heat—all the standard procedures," said Busch. "Nothing helped."



BACK IN ACTION — Hans Busch sits in cockpit of Stinson Voyager in which he made recent forced landing in Linda Vista lot.

Nearest spot for a forced landing was a Linda Vista school yard, and Busch headed for it. Then he spied a vacant lot just beyond and coaxed his sluggish craft toward it to avoid the fences ringing the school yard.

"I telephoned four or five members of my Civil Air Patrol unit," he said. "Within an hour over 15 persons, many of them strangers, were helping me drain the fuel from the plane and remove the wings.

"There were no 'bosses' on the job," he added. "They just arrived and started working. About 7 p.m., one of my unknown helper's wives even brought up food —sandwiches and lemonade."

Only six hours after the trouble started the plane was back at Montgomery Field, fully reassembled. Two days later it was flying again.

Busch, who has been in this country for 10 years, is a veteran pilot. He has flown since 1943 when he became a military pilot in his native Germany flying fighters, dive bombers and jets.

General Dynamics Sons Prove They Can Take It

Twenty-four tired, disheveled boys, all General Dynamics sons, dropped packs and headed for the showers late last month after two weeks of scrambling and clawing their way over rugged High Sierra passes.

On their first mountain trip in five years, Air Explorers Squadron 340, sponsored by GD/Convair Management Club, sought out rough regions rarely attempted by expert climbers. Thirteen of the 14 days found them above 10,000 feet, sunburned by day, shivering under ice-coated sleeping bags at night.

Gene Boyd (Dept. 197), squadron adviser, said, "It made men of us all. Every boy felt he had accomplished something worth while in proving himself."

Only those judged in top physical condition and able to take care of themselves were allowed to go. A night's stop at Edwards AFB gave them a last rest in beds before they headed into the mountains above Bishop the weekend of Aug. 4. From there they hit the trail cross-country — and cross-country meant across the rim from one high pass to another at 10,000 to 14,000 feet. For days they climbed over loose shale, around huge boulders, breaking precipitous trails, pulling themselves by ropes up sheer cliffs.

Heads were counted each night at the predetermined campsite to be sure no stragglers had been left on the trail, said Boyd. The boys, 17- and 18-year-olds (youngest was 15) split up in twos and threes to mark out their own routes, work their own ways each day across the rough country. It took eight hours to climb Harrison Pass alone.

Balanced, dehydrated meals, already packaged in plastic, were carried by each boy. Typical breakfast fare was eggs, spam, potatoes, hot chocolate. High energy lunch of peanuts, raisins, candy bar, drink was munched on the trail. Soup, biscuits, beans or stew, potatoes, salad and tea filled hungry mountaineers around evening campfires. Their second-half food supply was found hanging in a pre-arranged tree near Bullfrog, packed in from Independence.

Carrying the bare necessities, their one change of clothing was washed, along with themselves, in icy mountain streams; loose shoe soles torn by rocky trails were clamped back with small bolts; ragged pants were patched as best they could by firelight. Each boy sheltered himself from sharp winds and constant rain with ground covers and plastic sheets draped over trees and rocks as rude tents.

"All showed most amazing morale," praised Boyd, who with Bill Aston (Dept. 138) made the over 100-mile trek with the boys. Third adult leader, Jim Megargee (Dept. 48), was only casualty. He was packed out midway when his feet became too sore to travel.

"By the time we ended the trail at the foot of Mt. Whitney we felt each had passed the supreme test of leadership, ability, calmness, and courage," Boyd summarized.

Next year's rough summer outing will take the troop back to the rapids of either the Rogue or Snake Rivers, with another mountain jaunt the following year.

Recreation associations at GD/Convair and GD/Astronautics chipped in to pay expenses above the $25 each boy paid for his own food supply. Medical supplies for emergencies which never came were sent along by the company.

PROCESS ANALYST FINISHES COURSE

Howard E. Pohlenz, GD/Astro Dept. 270-1 process analyst, recently completed a 10-day course in statistical methods in industry at the University of California, Los Angeles.



GOOD CATCH—Ruth Menzie, wife of GD/Convair's Bob Menzie, holds big corvina pulled out of Salton Sea, Calif., recently.

FEMININE ANGLER LANDS BIG CORVINA

General Dynamics anglers in California looking for good fishing spots are turning more and more to Salton Sea, Bob Menzie, CRA Fishing Club commissioner, reports.

His wife, Ruth, pulled in a couple of big corvina to take a top club award recently. Her double catch weighed 12½ and 13¼ lbs. respectively and measured about 30 inches long.

She caught them on a 25-lb. monofilament line using mud-suckers for bait.

Corvina, native of the Gulf of Mexico, were transplanted to California's inland sea about five years ago and get as large as 40 lbs., said Menzie. However, the record weight of any registered with the Southwest Anglers Association is 15 lbs., 3 oz.

Besides corvina, other good eating fish in the sea include the smaller sargo, which runs to around 12 inches in length.

GD/Telecommunication Division Created With Rochester Hdq.

NEW YORK—General Dynamics Corporation has announced formation of a new division, General Dynamics/Telecommunication.

The new division, headquartered in Rochester, New York, produces the Stromberg-Carlson line of telephone equipment for the independent telephone company industry. It was formerly a part of General Dynamics/Electronics.

"In view of the growing importance of the corporation's telephone business," Frank Pace Jr., chairman of General Dynamics Corporation, said, "this division now merits independent status."

John H. Voss, general manager of the telecommunication operation for eight years, has been appointed president of the division and senior vice president of General Dynamics.

In a related move, the corporation announced the unification of the remaining operations of General Dynamics/Electronics with those of General Dynamics/Pomona.

General Dynamics/Electronics, which has operations in both Rochester and San Diego, Calif., produces electronic equipment for defense, industry and the home. General Dynamics/Pomona, headquartered in Pomona, Calif., produces the Advanced Terrier, Tartar, Redeye and Mauler missile systems, and advanced defense electronics systems.

The combined operation will be headed by Charles F. Horne as president. Horne is president of General Dynamics/Pomona and senior vice president of General Dynamics.

"This most recent move," said Pace, "is a continuation of the consolidation of electronic activities begun earlier this year By combining the direction and competence of these two electronics-oriented divisions, we feel we can strengthen our position in a fast-moving industry both in end products and in support operations to weapons systems to provide more rapid development and greater flexibility."

Pace emphasized that existing operations will be continued at their current geographical locations.

Cards Distribution 'Wild' in Pinochle

The cards went wild while Matthew Fuller, GD/Astro Dept. 771-0, his parents and sister were playing pinochle the hard way (with two decks and no nines) recently.

Diamonds were trumps, and after all meld was on the table it was discovered that each player had a complete run in that suit: an ace, king, queen, jack and ten each.

Vultee Reunion Set For Oct. 21

Notices went out this month to 900 Vultee Field veterans scattered over the country from Long Island, N. Y., to the West Coast reminding them of their 14th annual reunion, Oct. 21-22.

Wes Magnuson of General Dynamics/Astronautics, heading the committee, said 100 replies had been received by last week with more coming in every day.

Site of the annual get-together to reminisce over old times will be the Town and Country Hotel in San Diego's Mission Valley.

On the Saturday program is swimming, games in the afternoon; cocktails and dinner, 6 to 8 p.m.; a men's gabfest at 8:30 p.m.; fashion show for the ladies from 8:30 to 10 p.m.

Helping Magnuson with arrangements are Earl Williams, Art Braidic, Pete Nagy, Norvel Jones, all of GD/Astro. H. A. Smith, GD/Convair chief plant engineer, will head the reception committee.



COMBINATION—XP-81 (first flown by Frank W. Davis, now GD/FW president) bridged shift from propeller planes to jets. It used both types of power.

They Sprouted

Pioneers of '40s Sowed Seeds That Grew Into Deltas of '50s

(This is installment No. 67 of a continuing narrative dealing with General Dynamics products of the past. In the years which this installment touches upon Vultee Field was a division of Consolidated Vultee.)

Vultee Field had "worked itself out of a job" by mid-1944. Manufacture of basic trainers for the Air Force and Navy stopped when the Downey, Calif., assembly line had produced more than 11,000. A reduced factory force turned to making components for planes in production at other plants.

The engineering staff tackled a broad array of research and development projects in new fields—supersonic flight, rocket propulsion, missile guidance. From pioneering work at Vultee Field in 1945-46 came the world's first delta wing aircraft (XF-92, F-102) the western world's first supersonic bomber (B-58), the Navy's first operational anti-aircraft missile (Terrier) and developments leading to the first intercontinental ballistic missile (Atlas).

A research project already under way bridged the shift from propeller-driven planes to craft powered by reaction motors. The XP-81, conceived in 1943 and flown in 1945, used both turboprop and independent jet. An all-jet design followed in 1944-45, a proposed Navy night fighter powered with three turbojet engines and having the high subsonic speed of 561 mph.

Early in April, 1945, this entry appeared in the weekly Vultee Engineering Reports: "Work has just started on possible airplanes for supersonic speeds . . . A turbo rocket powered plant seems the most promising at present. Practically no aerodynamic data is available in this speed range, and what there is isn't consistent."

(This was two and a half years before man's first supersonic flight, in the Bell X-1 rocket plane at Muroc, Oct. 17, 1947.)

The Air Force announced a competition in September, 1945, for a supersonic interceptor, capable of climbing to 50,000 feet in four minutes and attaining a speed of 700 mph. At Downey the design problem was turned over to Frank W. Davis, then assistant chief engineer; Adolph Burstein, chief of design; Ralph H. Shick, chief of aerodynamics. Their studies produced a proposal that won a contract in May, 1946, for two airplanes. The design incorporated a swept wing, V-tail and ducted rocket (ramjet) power plant with external liquid rocket motors for takeoff and climb and an auxiliary turbojet for subsonic cruising.

It soon became evident that two problems would have to be separated and solved independently—design of the unique power plant and development of a supersonic airframe. In November, 1946, the XP-92 contract was amended to provide two programs. One led to extensive laboratory and wind tunnel experimentation with ramjet burners and gasoline-oxygen rockets. A design configuration incorporating these elements reached mockup form in 1948. The other program was confined to aerodynamics and led to the delta-winged interceptors of the '50s.

The XP-92 airplanes (USAF switched from "P" to "F" for fighter designation in 1948) were never built, but an offshoot became the XF-92.

XP-92 design novelties included placement of a pressurized cockpit within the ramjet spike diffuser and the forward section of the fuselage was arranged as a breakaway capsule for emergency escape at high speeds (the design maximum being 1,165 mph at 50,000 ft.) A parachute was designed to lower the capsule to a safe altitude for bailout.

The power plant, fueled with gasoline and liquid oxygen, would have combined four exterior rocket motors (4,000 lbs. thrust each) and a ramjet fed through 16 injector rings, coupled with 16 "peanut rockets" (50 lbs. thrust each) to serve as igniters and provide additional thrust. An Offenhauser engine, modified to take combustion air from the Lox supply, was developed as a 120 hp auxiliary unit to drive generator and fuel pumps.

Because of wide disparity between takeoff and landing weights, (due to large fuel consumption), a takeoff cart was designed. It would brake itself to a stop after the plane became airborne. Light tricycle gear was designed for landing only.

Active Roles Assigned GD Men at SAE Meeting

Eighteen men from four divisions of General Dynamics Corporation are scheduled to take part in the Society of Automotive Engineers National Aeronautic and Space Engineering and Manufacturing meeting Oct. 9-13 in Los Angeles.

Participating from General Dynamics/Astronautics will be: Larry Granstedt, chief tool engineer, forum panel member; V. G. Melquist, manager of manufacturing development, forum secretary; C. C. Campbell, supervisor of reliability testing, will deliver paper; J. F. Watson, staff scientist, forum chairman; J. C. Fischer Jr., senior flight test engineer, will deliver paper; and Carl Priest, specifications group engineer, panel member.

Those from General Dynamics/Pomona will include: H. E. Jordan, design group engineer, forum co-chairman; H. F. Sawyer, design specialist, forum secretary; E. D. Heller, value control coordinator, forum chairman; A. H. Dunn, manager of applied manufacturing research and process development, will deliver paper; and T. A. Vogel, senior design group engineer, panel member.

Participants from General Dynamics/Convair include: E. W. Fedderson, director of manufacturing development, forum chairman; J. H. Famme, division general manager and vice president, forum chairman; R. D. Small, group engineer, and G. F. Campbell Jr., design specialist, will deliver a joint paper; and P. E. DiBartola, senior engineer, will deliver a paper.

L. M. Smith, structure group engineer, who will deliver a paper, is the representative of General Dynamics/Fort Worth.

GD/Astro Son Chosen For Scholar Honors

Anthony Tafoya, son of Tony (Dept. 771) and Teddy (Dept. 220-1) Tafoya of General Dynamics/Astronautics, has been awarded a three-year scholarship at the University of Santa Clara.

His scholarship was awarded by the State Scholarship Commission. Tafoya will major in physics.

EL MONTE PICNIC

General Dynamics employees in the San Diego area who are former residents of Wisconsin are sought for a third annual picnic at El Monte Park Sunday, Oct. 1, from 10 a.m. Information is available from Mary Campbell, group president, at Astronautics, ext. 2303.

DIVISIONS CONFER ON COST REDUCTION

An inter-division conference on the Employee Suggestion and Cost Improvement Proposal plans was conducted Aug. 28 at General Dynamics/Pomona.

Objective of the conference was to discuss problems common to all the participating divisions and to recommend solutions. Subjects discussed included inter-division interchange of suggestions and their handling, handling of suggestions involving classified information, priority of suggestions, performance reports between divisions, suggestions dealing with union negotiations, and handling of suggestions requiring corporate action.

Participating in the conference were: M. J. Scott of General Dynamics/Fort Worth, A. R. Mosco of GD/Astronautics, and J. M. Langendoen, R. W. Anke and F. J. Fuller of GD/Pomona.

Truck Purchased With Con-Trib Funds Helps Unemployed in Spare-time Work

A truck, bought with funds from General Dynamics/Convair and General Dynamics/Astronautics Con-Trib-Clubs, is helping men from correctional institutions keep working while they look for permanent jobs.

Cost of a three-quarter ton stake-body truck was divided between the two Con-Trib-Clubs to continue the non-sectarian work project of the Episcopal Community Service. Each donation amounted to $1,231.

During the last four years the project has provided temporary work for men discharged from County Honor Camps until they find permanent employment. Over 400 men were helped out with odd jobs last year, said Rev. A. C. Elcombe, director of the service. The new truck replaces an outworn one used to haul men and tools to such part-time work as painting and repairs, window washing, yard and garden upkeep.

A letter from the Rev. Elcombe said, "I wish we could personally convey our thanks to the employees from whom this money comes."



SUGGESTION PARLEY—Representatives of three General Dynamics divisions were present Aug. 28 at Pomona for conference on common problems relating to Employee Suggestion and Cost Improvement Proposal plans. Around table, from left: F. J. Fuller and R. W. Anke of GD/Pomona, M. J. Scott of GD/Fort Worth, and A. R. Mosco of GD/Astronautics. Not shown: J. M. Langendoen of Pomona.

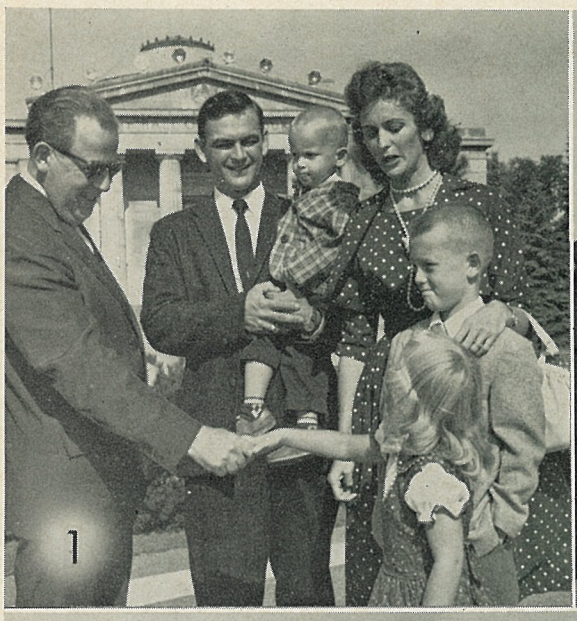
FORMER NORTHROP STUDENTS CALLED TO ALUMNI PICNIC

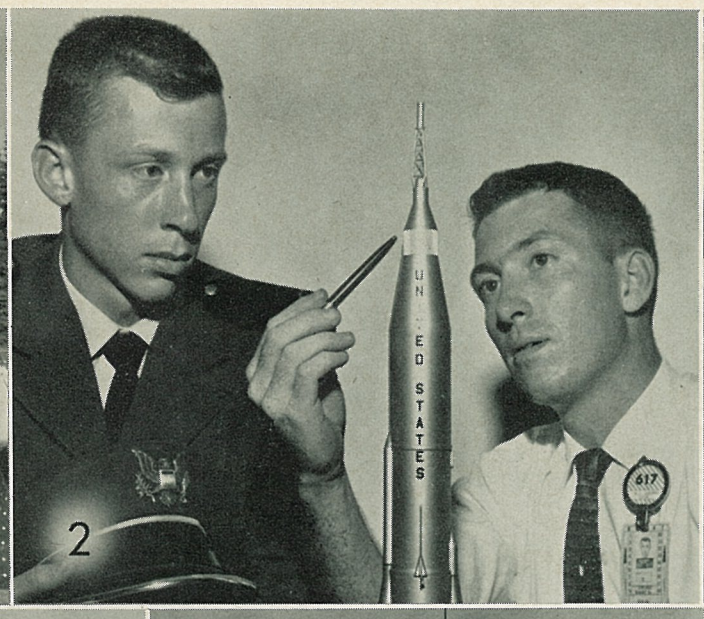
General Dynamics employees who are former students of the Northrop Institute of Technology are being sought for an Alumni Association picnic Sept. 24 at Felicita Park, Escondido.

Prof. J. R. Evans, national executive secretary of the group, will speak.

Of some 80 members of San Diego area group, more than 80 per cent are employed by General Dynamics/Convair and Astronautics.

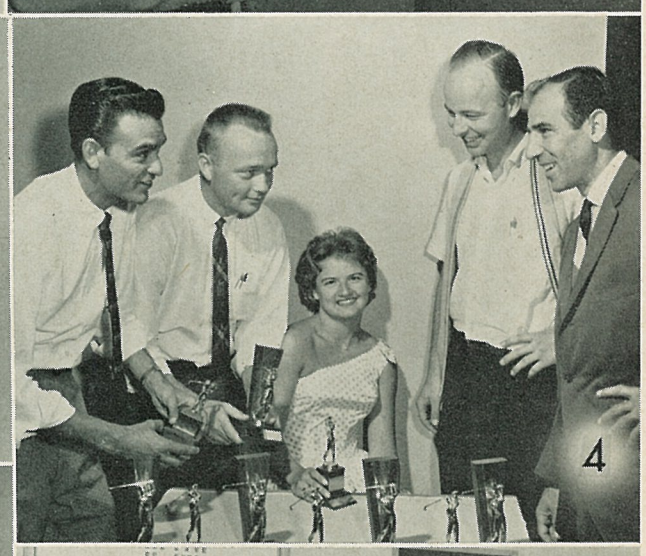
Picnic time, with each family bringing its own lunch, is 11 a.m. Information is available through Ralph A. Sheheen, ext. 2491, or Robert Briggs, ext. 2886, both of Astronautics.


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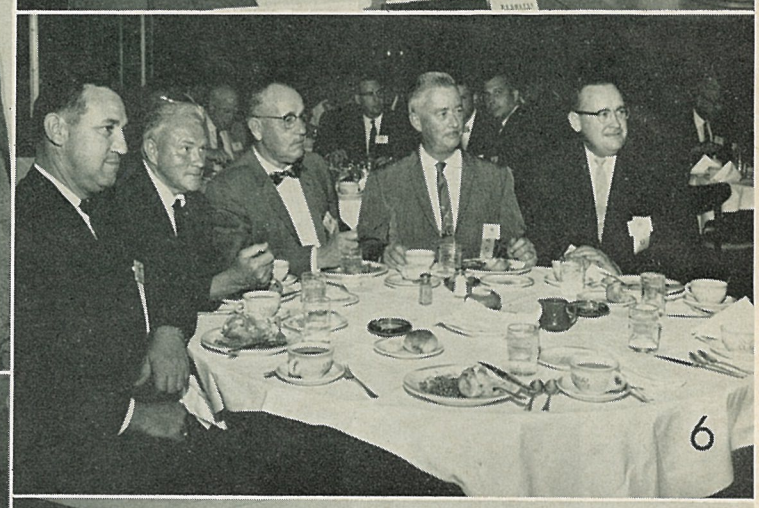


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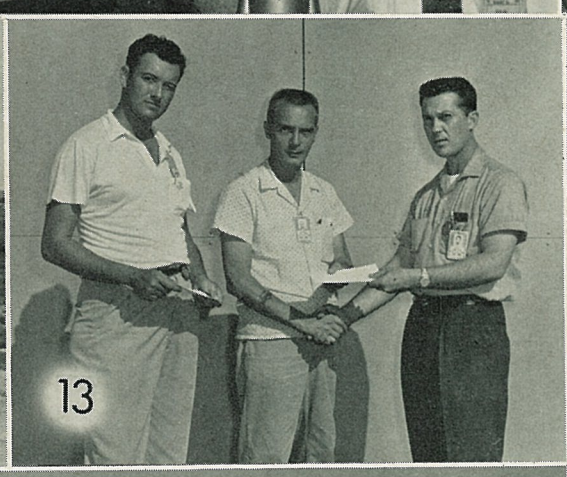

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ROUNDING ATLAS BASES—(1) GD/Astro's M. L. Stanleys recently were named "Family of Week" at Plattsburgh, N. Y., and Mayor John Tyrell, left, congratulates Debra, 6, with Richard, 9, Kevin, 2, and Mr. and Mrs. Stanley. City Hall in background. (2) R. D. Shriner, stationed at Altus AFB, goes over Mercury capsule with brother, Cadet John N. Shriner, student at Air Force Academy. (3) Karel Bossart, GD/Astro technical director, accepts plaque from Lt. Col. A. B. Scheaffer of Sheppard AFB Technical Training Center, recognizing participation in "Space Logistics" panel. (4) It was trophy time for GD/Astro golfers at Fairchild AFB. Jim Pieroni and Dick Palmer, golf commissioners, are at right. At left is Carl Keehn of Rocketdyne team and Howard Burns of winning "Blind Boogies" (Astro) team. In center is Sharon Quick, league secretary. (5) L. I. "Russ" Medlock, GD/Astro operations manager at Warren AFB, was made "colonel" recently in Fifth Volunteer Cavalry of Wyoming. (6) Conflicting shifts make it rare occasion when these Sycamore Canyon security officers get together. From left, H. W. Gillespie, J. R. Oliver, G. E. Ray, E. C. Bernhard, C. L. Ray. Latter are fire lieutenants. (7), (8), (9) GD/Astro Wives Club at Schilling AFB saw fall fashions during August show. Models include Mrs. R. Borrell, Mrs. F. H. Furey, Mrs. A. T. Landry, Mrs. F. Mays, Mrs. T. Middleton, Mary Scapin. (10) Taking part in contract discussions at Plattsburgh AFB are J. Bachman (Astro), L. M. Allen (Bechtel Corp.), W. H. Dunn, Astro operations manager, C. G. Keach (Astro) and P. D. Sanchez (Air Force). (11) On behalf of all GD/Astro folk, W. H. Dunn accepts city's welcome at Plattsburgh, N. Y. (12) Paul Dudney, general foreman, presents Employee Suggestion award to B. B. Belt at AFMTC as other ES winners watch: D. R. Gowin, A. R. Gaudet, H. H. Packer, J. M. Keane. (13) A. M. Conley, left, and Gordon Holmes of GD/Astro laboratories at AFMTC receive ES awards from Burt Phillips, right, program support foreman. (14) Larry Messacar, left, cost control supervisor, and Edward N. Gray, master schedule analyst, were reunited recently at Plattsburgh AFB. They hadn't met since both worked for Rohr in San Diego. (15) William J. Wade, AF labor relations adviser, receives service emblem from Col. T. S. Jeffrey, SATAF commander at Fairchild AFB, and check for Sustained Superior Performance.

Launch Replacement Speed Mark Broken; Lowered to 17 Min.

VANDENBERG AFB—General Dynamics/Astronautics and contractor personnel here have laid claim to a new record (17 minutes!) in installing a replacement launcher.

Prior to the effort the crew recalled another record in which Forbes AFB accomplished the task in two hours and thereby claimed a new mark. They set out to beat it.

With Assistant Test Conductor Jim McGan as timekeeper, the crew lifted the launcher off its truck, lowered it into position, verified its true position with optical tooling under direction of Joseph Ardoin (Dept. 576-3) and tightened the last bolt.

All of this in just 17 minutes!

Bob Griffin Honored By Altus Chamber

ALTUS AFB—Robert Griffin, former GD/Astronautics communication representative here, was honored unexpectedly recently by being named an honorary president of the Altus Chamber of Commerce.

Griffin recently left Astro to begin a two-year course leading to a master's degree at Harvard's Graduate School of Business Administration.

A party was given in his honor by Dick Moore. At its conclusion Don Elwick, manager of the Chamber of Commerce at Altus, presented Griffin with a certificate.

Only one other man has been so honored in the history of the Altus Chamber of Commerce.

Veteran AF Adviser Honored For Service

FAIRCHILD AFB—William J. "Bill" Wade, veteran Air Force labor relations adviser, was honored here recently with a Sustained Superior Performance Award of $250 by the Air Force.

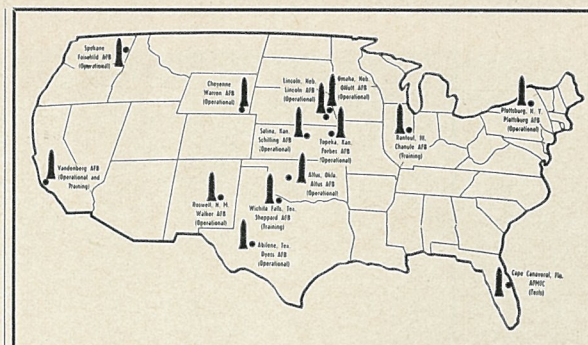
Col. Thomas S. Jeffrey, SATAF commander here, made the presentation.

For more than 10 years Wade has served Air Force units as a labor relations adviser, starting at Wright-Patterson AFB, then shifting to the Air Procurement Office, Seattle. In 1959 and 1960 he was assigned to Warren AFB SATAF office.

Wade is now located at Vandenberg AFB where he is special assistant to the SATAF commander on labor relations affecting ballistic missile activities in that area.

ASTRO GIRL WEDS AT PLATTSBURGH

PLATTSBURGH AFB — A honeymoon in the New England states followed the wedding of Bonita Marie Bunker, GD/Astro Dept. 620-2 here, to Francis B. Keyser Aug. 26 at Redford, N. Y.



OFF-SITE NEWS

GENERAL DYNAMICS NEWS CONTACTS

AFMTC—P. C. Brown, ext. 3-4741.
ALTUS—John Lockwood, ext. 7141.
DYESS—G. D. Higgins III, ext. 8370.
EDWARDS RS—Chris Marques, ext. 27.
FAIRCHILD—C. C. Clickner, ext. 5596.
FORBES—Jane Cordner, ext. 4514.
LINCOLN—David Reichenbacher, ext. 264.
PLATTSBURGH—Kenneth Emery, ext. 6378.
SCHILLING—D. J. Rahlfs, ext. 8136.
SHEPPARD—Steve Delbridge, ext. 8243.
VANDENBERG—Lucy Signorelli, ext. 8-5046.
WALKER—Rod Bricker, ext. 2309.
WARREN—Alice Watters, ext. 73-716.

4,000 Guests Expected For Vandenberg Picnic, Needy Children Benefit

VANDENBERG AFB — Needy children in nearby school districts will profit later from what is being billed as the "biggest picnic ever held in Santa Barbara County" which comes off Oct. 8.

At that time more than 4,000 persons are expected to join in a picnic of General Dynamics/Astronautics employees here. Sponsorship falls jointly between Astronautics Recreation Association, Astronautics Management Club and Astronautics Wives Club here.

The event will be held at the Union Oil Company picnic grounds in Orcutt and will feature all the events, games and attractions that have made this annual affair a success in the past.

Last year more than $800 was raised for needy school children.

Co-chairmen for this year's picnic are Mrs. G. D. Duncan of Lompoc and Mrs. J. W. Maybee of Santa Maria.

Several planning sessions have been held to date with key picnic assignments handed to: Clyde Medearis, program; Otis Tucker, transportation and grounds; August Daddi and Ross Workman, clean-up; Jack Bredehorn, ticket sales; Bob Jacobs, finance; and Emile Genest, publicity.

Wives Club Keglers Starting at Dyess

DYESS AFB—A winter Wives Club bowling league among GD/Astro women here got under way this week at Abilene's Henson Bowling Lanes.

The loop meets each Monday. Free bowling instruction is provided.

League officers are: Jerry Crossman, president; Sharon Arnold, vice president; and Carol Vander Weide, secretary.

Captains of competing teams are Nancy Brooks, Betty Stengel, Jo Ann Bellomy, Pearl Bloyd, Darcas Mills, Jane Jenkins, Liz Higgins, Alice Aldridge, Bennie Green and Jerry Crossman.

GD/ASTRO SON WINS BOOK SCHOLARSHIP

WARREN AFB—John A. Giddings, son of Homer E. Giddings, GD/Astro employee here, has been awarded a $200 "Book Scholarship" by the Fresno County Osteopathic Auxiliary.

The grant covers costs of books and supplies for graduate students at the College of Osteopathic Physicians and Surgeons, Los Angeles.

Young Giddings is a graduate of Fresno State College where he was on the dean's scholarship list. He participated in football and track activities.

Firefighter Training Brochure Prepared By Pair at Warren

WARREN AFB—W. D. Morgan, GD/Astro safety engineer here, and S/Sgt. Frank Perry of the base fire department have been credited with design and preparation of a unique document.

Called a "Community Firefighting Training Program" brochure, the document has been distributed widely to local civic groups in time for National Fire Prevention Week in October.

The brochure is a detailed report on equipment and particularly fuels common to Atlas missiles being deployed widely in the areas surrounding Cheyenne. It describes each fuel, its peculiarities and handling and gives some idea of how to handle each in emergencies.

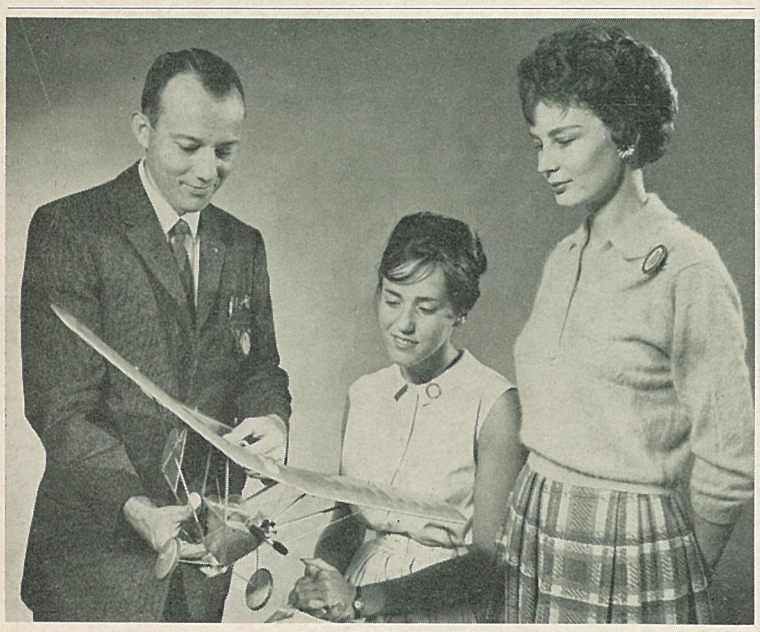
It also lists what to do should units transporting fuels or equipment be involved in accidents, etc.

GD/Astro Wives Hold Show at Schilling

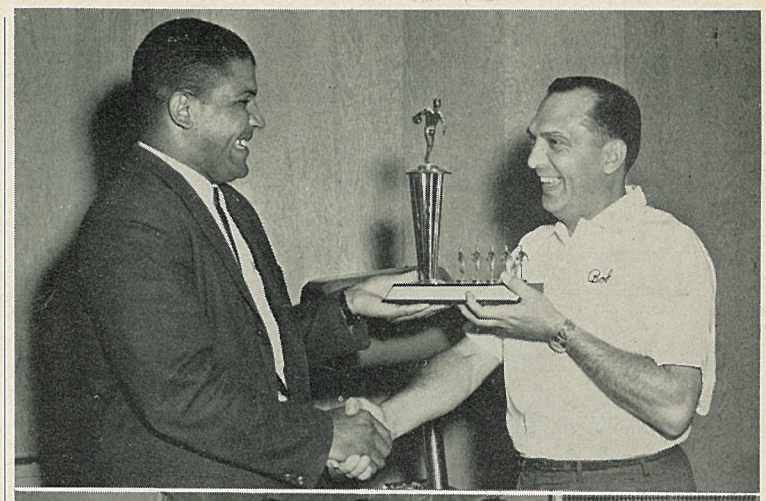
SCHILLING AFB—Eighty-five persons were in attendance at the Schilling AFB Officer's Club Aug. 10 when GD/Astro Wives Club here staged a fall fashion show in conjunction with a regular monthly meeting.

Sears of Salina provided fashions with Candy Moszeter as narrator. Models from GD/Astro wives group included Mrs. R. Borrell, Mrs. F. H. Furey, Mrs. A. T. Landry, Mrs. F. Mays, Mrs. T. Middleton and Mary Scapin.

Hostesses were Mrs. N. E. Dailey, Mrs. E. E. Durbin and Mrs. B. A. Crowley.



NEAT MODEL—Don Larsen (Dept. 15), president of reactivated Convair modelers group, explains fine points of 1924 light plane model, dubbed "bath tub" from shape of cockpit, to Virginia Pfleeger (Dept. 14) and Maritta Dupuis (Dept. 10). Model, built by Walt Mooney (Dept. 6), is from design of the late Etienne Dormoy, long-time Convair engineer.





SALINA'S FINEST—In top photo Bowling Commissioner Bob Stegman, right, brings home trophy to Charles Bernard, ARA rep at Schilling AFB, as Stegman's team finished nine games in front to win top Salina, Kan., keg league. Below are members of winning team, all GD/Astro, Bob Hoch, Paul Gordon, Mal Malicuit, "Tex" Luther and Stegman.

Ex-Shipmates Meet At Atlas Base in NY

PLATTSBURGH AFB — A chance meeting here recently reunited two General Dynamics/Astronautics employees who haven't seen one another since working on the Convair 880 subcontracts at Rohr Aircraft.

Larry Messacar, cost control supervisor, and Edward N. Gray, master schedule analyst, happened upon one another in the corridors. It was the first meeting since they both left Rohr in 1959.

Warren Assist Wins AF Praise

WARREN AFB—Special praise for General Dynamics/Astronautics personnel here as well as subcontractor employees has been given by Air Force officials.

Col. E. A. Swanke, commander of the 6565th Test Wing at Vandenberg AFB, originated the letter of appreciation which was further endorsed by Maj. Gen. T. P. Gerrity, commander, Ballistic Systems Division.

It focused attention on a project to assist an Atlas launch facility at Vandenberg AFB through use of equipment from this base.

"I would like to extend my own personal appreciation for the efforts of GD/Astro and your subcontractor for an outstanding accomplishment," said Col. W. E. Todd, SATAF commander here. Col. Todd's letter was addressed to L. I. Medlock, GD/Astro operations manager here.

Picnic Planned For Dyess AFB

DYESS AFB — Plans for a "Texas-size" picnic for General Dynamics/Astronautics employees and their families here have been announced.

Slated from 1 to 5 p.m. Sept. 24, the event will be held at the Dyess AFB picnic area just inside the main entrance gate.

A catering company will provide a baked ham and roast beef dinner with all the trimmings. Price is $1.75 for adults and $1.50 for children (6 through 21 years). Those under six years of age will be admitted free.

Entertainment will be provided by members of the Dyess AFB Playhouse. Many different types of games, contests and events will be offered by the Wives Club.

Dub Polson of employee services will provide additional information.

GD/Astro Welcomed To Plattsburgh, N.Y. In Civic Greeting

PLATTSBURGH AFB — The M. L. Stanley (he's GD/Astro Dept. 650-5) family here recently received special recognition as Plattsburgh, N. Y., "Family of the Week."

Special ceremonies saw Stanley, his wife; Richard, 9; Debra, 6; and Kevin, 2, interviewed by local press and TV reporters. They received numerous gifts and certificates from local merchants.

Mayor John Tyrell, Robert J. Feinberg, Clinton County assemblyman, the local Chamber of Commerce and Merchants Association presidents also took part in the greeting, conducted on Plattsburgh's City Hall steps.

During the course of the event special welcome was extended to all General Dynamics/Astronautics employees to the area. Participating were local leaders and W. H. Dunn, GD/Astro operations manager here.

Softball Game Pits Forbes vs. Schilling

FORBES AFB—GD/Astronautics softball team traveled to Salina, Kan., recently for an unusual game which pitted ARA-sponsored teams from two operational Atlas ICBM bases.

The Forbes AFB team downed their Schilling AFB counterparts 10-9 with G. May of the Topeka team smashing a home run. Al Striplin, Forbes ARA softball commissioner, was the winning pitcher.

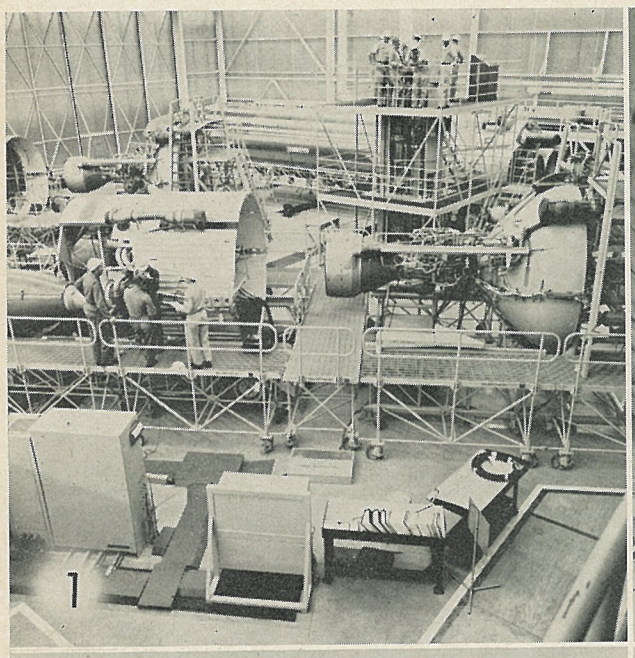
The game was a return venture, following an earlier Schilling-Forbes tilt played here. May was winning pitcher in that engagement, with Forbes downing Schilling 6-2.

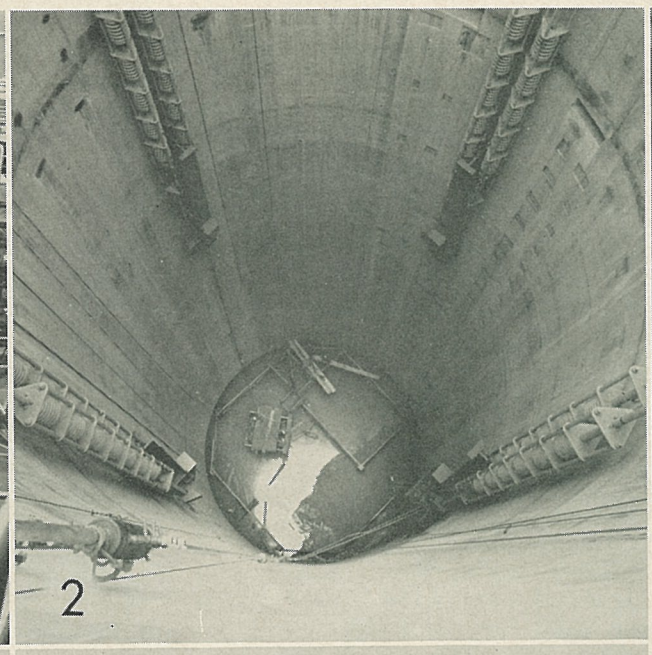
Haas' Score of 30 Wins 9-Hole Tourney

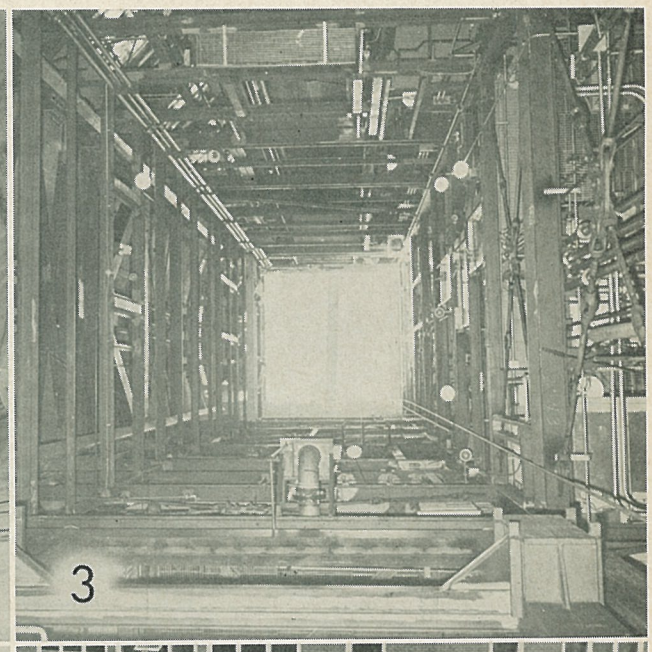
WARREN AFB — Thirty-eight entries were on hand here Aug. 19-20 for a golf tournament sponsored by ARA among Atlas program personnel.

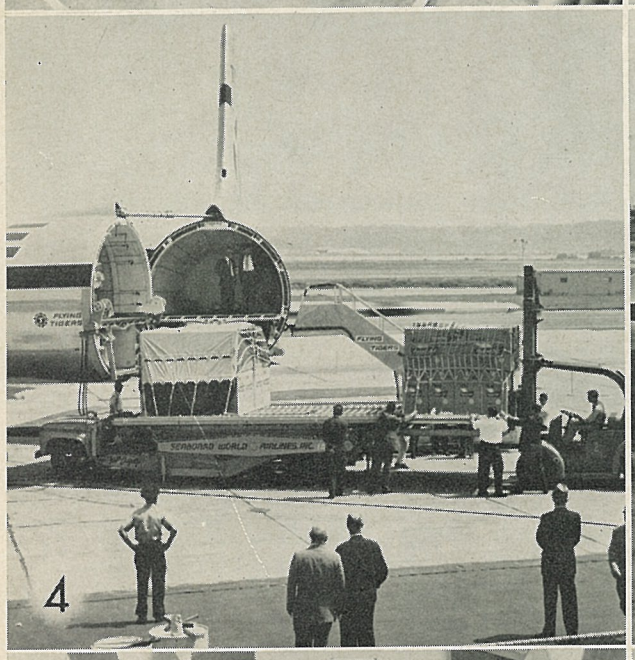
S. D. Haas of Dept. 611-4 was the winner with an even 30 over the nine-hole layout. Finishing behind Haas in order were H. Stack and D. Williams with 33s, J. Davis and R. Holey with 35s.

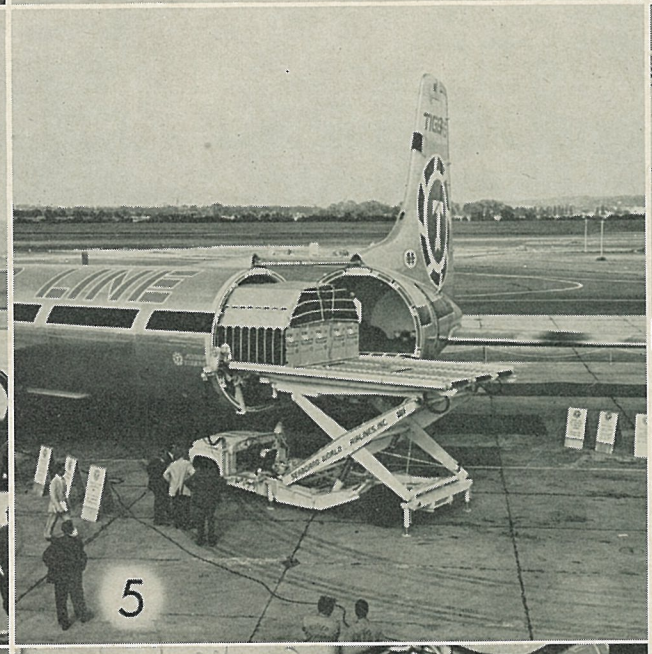
The event was sponsored by the ARA Golf Club under Commissioner Herman Brehmer and ARA representative Jim Allen at the Cheyenne Municipal Airport course.


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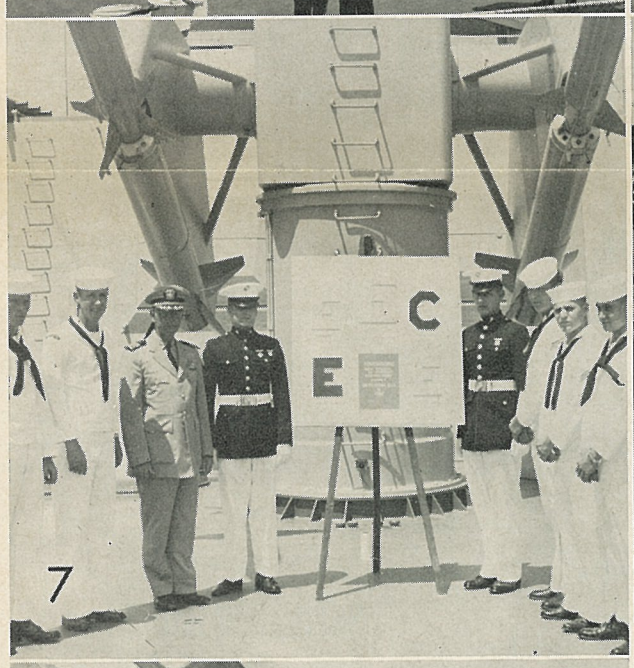

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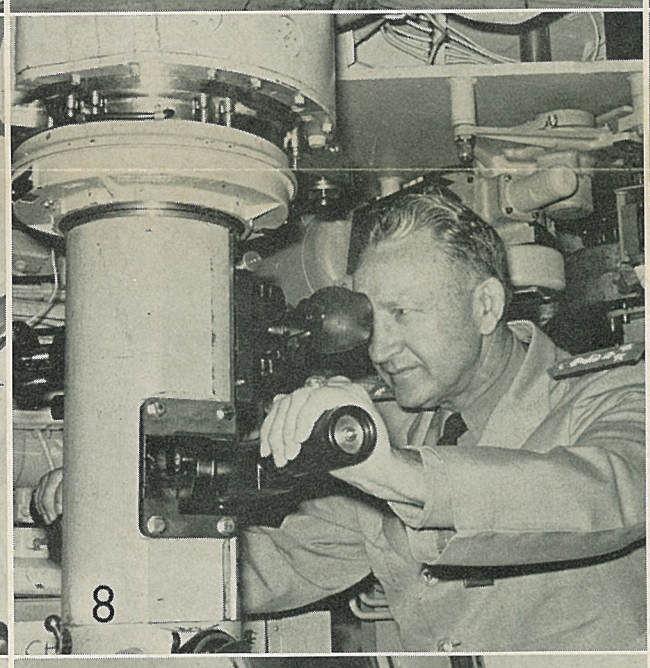

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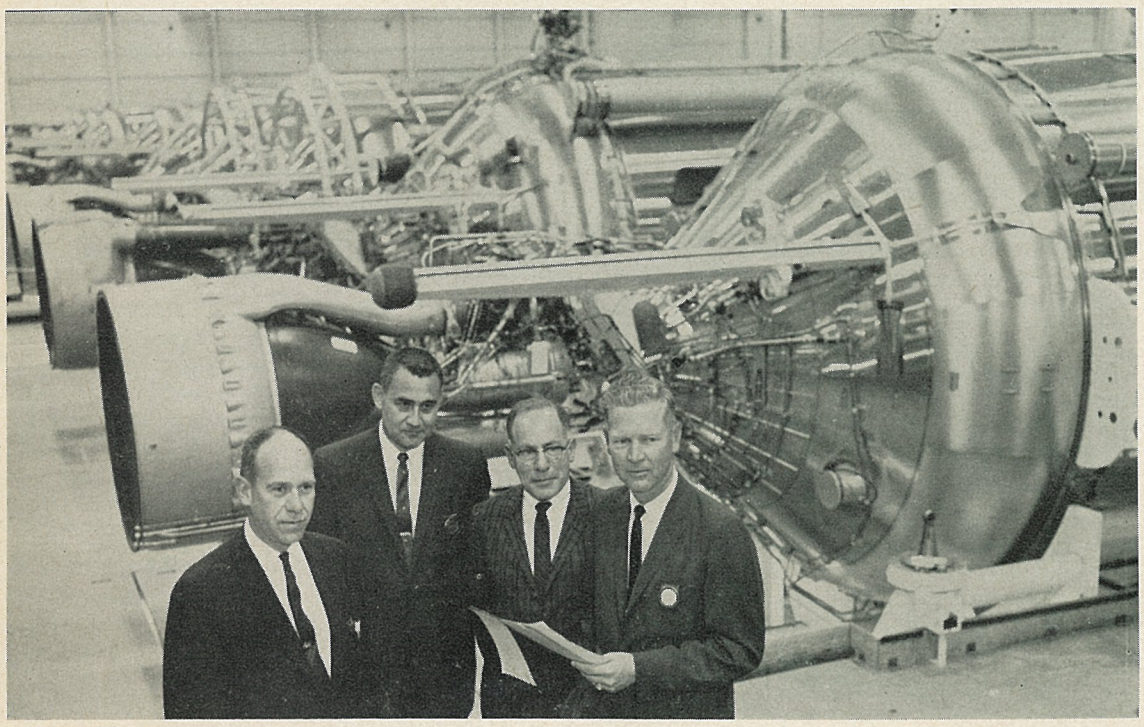
NEWS REEL — Photos from far afield highlight General Dynamics products. (1) Few students have more impressive classroom than those training for Atlas missile squadrons at Sheppard AFB, Tex. Air Force personnel are in actual study session, using GD/Astronautics-built trainers. (2) From Lincoln AFB comes this view of Atlas silo construction, looking down, showing massive shock springs which guard "insides" against earth movement. In (3), looking from bottom up, steel cradle is in place, ready for installation and checkout of Atlas missile. (4) Canadair Limited's spectacular "Forty Four" cargo plane, featuring swing-tail loading, prepares to absorb two pallets of freight (8,000 lbs. each) and in (5) task is almost completed. (6) Photo of Canadair CF-104. "Forty Four" is capable of carrying two 104 fuselages, with engines, plus wings and tails, etc. (7) Terrier missiles (built by GD/Pomona) shared in honors when USS Providence earned awards of "Es" in missilery, gunnery, engineering and battle efficiency, and "C" for communication excellence. Crew members pose with Capt. Russell Kefauver under Terrier launcher. (8) Vice Adm. Claude V. Ricketts, new Vice Chief of Naval Operations, mans periscope of Polaris submarine Ethan Allen during tour of General Dynamics shipyard at Groton, Conn. (9) Here he is at controls with Capt. Paul L. Lacy and Vice Adm. Elton W. Grenfell, Commander, Submarine Force, Atlantic Fleet. (10) Lt. Col. Frank R. Jones, 59th FIS commander, Goose Bay, Labrador, congratulates 1st Lt. Gerald S. Miller after 1,000 flying hours in GD/Convair-built F-102. At right is GD/Convair field service rep, J. A. Myrann. (11) Allen I. McCone, Special Assistant for Installations to Secretary of Air Force, says "wonderful ride" after Mach 2 hop in GD/Convair-built F-106B at McGuire AFB, N. J. (12) Maj. Keith Cookus, left, praises F-106 pilots of 319th FIS, Bunker Hill AFB, Peru, Ind., for high marks in weapons deployment at Tyndall AFB, Fla. Pilots, from left: Capts. C. C. Gaylord, W. C. Gatschet, F. E. Hanson; (in rear) G. T. Beckman, J. W. Rodgers, 1st Lt. T. F. Pope. Lt. Col. W. O. Beane commands 319th; Ray Schaper is GD/Convair rep. Eleven F-102 and F-106 squadrons will vie in William Tell Weapons Meet at Tyndall next month.

GD

ASTRONAUTICS EDITION

GENERAL DYNAMICS NEWS

VOL. 14, NO. 19 PUBLISHED BY GENERAL DYNAMICS CORPORATION WEDNESDAY, SEPT. 13, 1961



IN SPOTLIGHT—This quartet of GD/Astro executives, plus W. H. Patterson, vice president—advanced project planning, will appear tonight (Sept. 13) as panel before Astronautics Management Club. From left, they are, E. D. Bryant, vice president—operations; W. W. Withee, vice president—research and engineering; Mortimer Rosenbaum, executive vice president; and J. R. Dempsey, president. They are shown on Atlas final assembly line.

Barbecue Pits Prepared For 'Western Jamboree'

The swing of a square dance and the one-two of a waltz, barbecue prepared in open pits, and entertainment from the "Old West" are in store for General Dynamics/Astronautics Saturday (Sept. 16).

You'll find it all in the ARA Recreation Area at San Diego where a gala "Western Jamboree" will be unfurled under the stars.

Chefs under Roy Eastberg and Gil Hutter will begin barbecuing whole steers more than a day in advance. They will serve man-sized portions from 7 to 10 p.m.

Around 8 p.m. entertainment will get under way with specialty acts, "gun slingers," Indian "spirit" dancers and others performing at one of the tennis courts.

At 9 p.m. square dancers will converge on one of two large picnic shelters to whirl to the direction of guest callers. For those who prefer to watch, the Astro Nauts of ARA will give special exhibitions.

Meanwhile, at one of two tennis courts Buster Carlson and his popular 10-piece ARA Band will provide music for those who prefer the fox trot, waltz and the Latin tunes.

One tennis court, plus all individual picnic shelters in the area, will be open for those who like to "sit out" the evening under the stars.

Tickets for the event are available at all employee services outlets, dinner and dancing for $1.50 each. Dancing only tickets are at 50 cents each.

The event is sponsored by ARA's Women's Activities.



GOING WESTERN—All roads (and travel modes) lead to ARA Recreation Area Sept. 16 for gala outdoor barbecue and dance (both round and square). Here three key planners, Jean Bryan, Dixie Quesenberry and Bud Mecham, demonstrate various means that can be employed in coming to "Western Jamboree."

Dempsey Heads Panel Talk For Club Tonight

For the first time since Astronautics became a separate division of General Dynamics Corporation top management officials will appear as a panel for discussions.

The occasion is a meeting tonight (Sept. 13) of the GD/Astronautics Management Club slated for El Cortez Hotel in the new convention hall (if completed) or the Caribbean Room.

Sponsoring members of material department have billed this meeting as a "Blue Badge Turkey Talk."

Appearing on the panel will be J. R. Dempsey, president; Mortimer Rosenbaum, executive vice president; W. W. Withee, vice president — research and engineering; E. D. Bryant, vice president — operations; and W. H. Patterson, vice president—advanced product planning. F. J. Traversi, director of material, will be moderator.



W. H. Patterson

Special comment will be given on Astronautics' move into the space business and how it will affect the division. Management Club members have been asked to submit questions.

Entertainment will feature original cast members from Starlight Opera hits of the season.

Heading planning for this meeting, the first since a summer "layoff," will be E. R. Messer, entertainment; C. C. Farnsworth, raffle; L. H. Allen, tickets and dinner; and I. B. Jenkins, "pusher."

Atlases Launched From Both Coasts

Atlas 101-D launched Aug. 22 by Strategic Air Command crew from Vandenberg AFB. Impact in western Pacific.

Atlas 111-D launched Aug. 23 by Complex 12 GD/Astro crew at Cape Canaveral as part of space probe, Ranger 1. Atlas functioned properly, but spacecraft failed to achieve proper orbit.

Depts. Formed, Titles Change in Organization Shift

Several organizational changes and personnel appointments at General Dynamics/Astronautics have been announced by J. R. Dempsey, president.

Concurrent with the changes; new departments have been created and some departments eliminated with some shifting of areas of responsibility among key supervisory personnel. All changes are effective immediately and transfer of personnel to fill departmental assignments are being made as necessary.

Under the new alignment, E. D. Bryant, vice president-operations, now has reporting to him:

Dept. 210 (operations estimating and forecasting), T. F. McCubbin, chief; Dept. 230 (scheduling), T. F. McAleer, chief; and Dept. 480 (operations planning and methods), H. L. Williamson, chief. These are in addition to ones now reporting to Bryant.

Now reporting to G. M. Robertson, director, management systems, are:

Dept. 153 (work assignment administration), administrator to be named; Dept. 154 (resources planning and control), J. K. Davant, manager, with resources planning, G. M. Coole, chief, and facilities control, A. M. Wrightson, chief, groups reporting to Davant; Dept. 155 (estimating), L. H. Boggess, manager; Dept. 101 (data processing), C. E. Diesen, manager; Dept. 151 (change administration), H. L. Ellsworth, manager; Dept. 152 (program planning and control), C. R. Walker, manager; Dept. 170 (organization and systems), M. F. McDonald, manager; and Dept. 175 (PACE management services), D. D. White, PACE program administrator.

Support administration (Dept. 305) has assumed responsibility for estimating, standards and performance reporting functions for product support department's support center.

Reliability control will now perform its own estimating, standards and performance reporting functions.

'Merit Employment Policy' Proclaimed

By executive order, General Dynamics Corporation has reaffirmed corporate policy that "all persons shall receive equal employment opportunities in accordance with their individual job-related qualifications, without regard to race, creed, color or national origin."

The setting forth of detailed policy, called "Merit Employment Policy," is in line with national principles proclaimed by President Kennedy and the President's Committee on Equal Employment Opportunity.



Earl D. Johnson

"For General Dynamics, this is reaffirmation of a policy in effect for many years. As an employer we are interested in an individual's ability and aptitude, and qualifications for advancement," Earl D. Johnson, General Dynamics president, commented in approving the order.

Specifically, the Merit Employment Policy states that, "Equal opportunities include, but are not limited to, employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay and selection for training including apprenticeship."

Division executive heads are charged with implementation of Merit Employment Policy, and R. H. Biron, senior vice president-industrial relations, is responsible for providing policy guidance, coordination and necessary follow-up in interpretation, etc.

The policy provides for development of recruiting practices that "seek out qualified minority group candidates for openings in professional, technical, administrative and clerical positions, as well as factory-skilled and semi-skilled occupations and apprentices."

Saturday Hours Set For Salvage Yards

Salvage yards at GD/Convair and GD/Astro will be open for employee sales during the next four Saturdays on the following schedule:

GD/Convair—Sept. 16 and 30.

GD/Astro—Sept. 23 and Oct. 7.

Gates Named Guards Chief

A. C. Gates, a veteran of almost 15 years service in General Dynamics security operations, has been named guard chief at General Dynamics/Astronautics by W. E. Bowman, chief of industrial security.

Gates replaces J. M. Mernik who has left the company.

Before joining the General Dynamics/Convair guard force in 1947, Gates served more than nine years in the U. S. Navy, rising to the rank of chief warrant officer. In 1951 he became a guard lieutenant and for almost 10 years has served as a guard captain.

On March 9, 1953, Gates took over direction of security operations at Plant 2 when that installation was reopened by Convair.

'Dynamic America' Sales Start Friday

First copies of "Dynamic America" will go on sale at bargain rate to General Dynamics/Astronautics purchasers this Friday (Sept. 15).

The profusely illustrated volume of development of General Dynamics Corporation goes to employees for $7.50. Regular price is $20.

Books may be purchased directly at employee services at the main plant in San Diego. Sample books will be on display at off-site points where orders may be placed.



SECURITY APPOINTEE—A. C. Gates, veteran General Dynamics security officer, has been named chief of guards at Astronautics.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Aug. 28.

Dept. 101-1, Business Data Processing: To data processing supervisor, A. O. Gudmundson, B. W. Piper.

Dept. 146, Reliability Control Enigneering: To reliability group engineer, R. K. Hood, H. O. Story.

Dept. 305-0, Support Administration: To support planning and estimating asst. supervisor, C. L. Allen, G. L. Austin. To support task control asst. supervisor, J. P. Mial.

Dept. 322, Support Publications: To support publications supervisor, B. Szpyrka. To support publications asst. supervisor, F. W. Bouse, R. A. Dilworth, B. M. Downes, A. E. Lewis, E. P. Sitler, R. M. Trease.

Dept. 335-3, Support Logistics: To clerical asst. supervisor, W. W. Dugan.

Dept. 337-7, Support Logistics: To parts documentation asst. supervisor, J. S. Blaha.

Dept. 350-3, Support Center: To analysis and control asst. supervisor, L. D. Spurlock.

Dept. 351, Support Center: To field modification general supervisor, D. T. Barber. To support publications supervisor, J. C. Gordon, R. J. Wirges. To field modification group engineer, G. W. Hall, R. A. Mills. To manufacturing control asst. supervisor—base, D. L. Frank. To support publications asst. supervisor, M. D. Askay, R. W. Estus, R. E. Lee, W. C. Pundsack. To inspection asst. supervisor, C. L. Bowman, J. C. Boyman, C. M. Patterson. To manufacturing control asst. supervisor, P. R. Prichard.

Dept. 400-0, Tooling Administration: To tool engineering administration general supervisor, G. B. Branch, H. J. Sumner.

Dept. 401-2, Tool Planning: To tooling supervisor, N. B. Powell Jr.

Dept. 402-1, Tool Design: To tooling supervisor, R. R. Sodomka.

Dept. 403, Tool Engineering Project Section: To tooling general supervisor, R. C. Emerson. To tooling supervisor, L. C. Albright, H. M. Edwards, E. W. Stelmach.

Dept. 404-0, Tooling: To tooling general supervisor, W. T. Lacy.

Dept. 521-6, Engineering Administration: To engineering services asst. supervisor, L. W. Buser.

Dept. 539-2, Design Liaison: To asst. design group engineer, D. W. Hale.

Dept. 597-5, Engineering Development: To asst. weight group engineer, J. A. VonDerWische.

Dept. 600-0, Base Activation: To activation project supervisor, W. Bailey Jr.

AFMTC

Dept. 571, GD/Astronautics Operations: To asst. foreman, W. B. Sullivan.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch complex asst. supervisor, M. B. Cottrell, J. W. Moss. To timekeeping asst. supervisor, J. L. Short. To activation engineering asst. supervisor—base, G. W. Smith Jr. To inspection asst. supervisor, D. C. Cox, J. A. Hudson. To asst. foreman, C. H. LeClerc.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To production control foreman, K. W. Fitch. To MAB supervisor, J. R. Profit Jr. To MAB asst. supervisor, A. L. Brady. To activation engineering asst. supervisor—base, D. H. Brown. To inspection asst. supervisor, W. L. Klepper. To asst. foreman, J. D. Roberts.

EDWARDS RS

Dept. 575, GD/Astronautics Operations: To guard lieutenant, A. A. Coleman.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To cost control supervisor, C. L. Kellerman. To timekeeping asst. supervisor, D. E. Carpenter. To inspection asst. supervisor, C. E. Lester, G. H. Townsend, K. F. Reed.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To task control supervisor—base, A. E. Divine. To receiving and stores asst. foreman, G. T. Booroom. To asst. foreman, E. L. Dickson, R. J. Hartman, R. L. Howard. To activation engineering asst. supervisor—base, J. T. Holmes Jr. To timekeeping asst. supervisor, E. Lorton. To sub-contract coordination asst. supervisor—base, J. W. Watts. To launch complex asst. supervisor, K. B. Malewicz.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To foreman, W. L. Johnson. To asst. test conductor, C. W. Koberg, R. I. Smith, R. V. Woodle. To asst. foreman, V. D. Brose, L. L. Corey, A. P. Kubaneck.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To foreman, B. A. Gallaway. To asst. foreman, T. L. Tucker. To inspection asst. supervisor, P. L. Cook, M. A. Hunter.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To chief of material—base, W. R. Williams. To launch complex asst. supervisor, K. B. Clark.

Service Emblems

ASTRONAUTICS

Service emblems due during the period Sept. 1 through Sept. 15.

Twenty-five-year: Dept. 851-1, P. F. Grijalva; Dept. 840-0, J. M. Jones.

Twenty-year: Dept. 131-1, Lois P. Cumberledge; Dept. 193-3, P. T. Brass; Dept. 214-1, K. E. Harris; Dept. 343-1, R. T. Mulroy; Dept. 401-2, J. J. Severy; Dept. 522-4, J. M. Lawyer; Dept. 547-3, W. C. Geopfarth; Dept. 578-1, S. N. Laverents.

Fifteen-year: Dept. 811-1, A. W. Lizarraras.

Ten-year: Dept. 110-0, Thomasena B. Wells; Dept. 130-1, G. L. Finley; Dept. 220-2, V. M. Salazar; Dept. 270-3, G. H. Livermore; Dept. 335-2, R. M. Nicholas; Dept. 337-3, Helen A. White; Dept. 342-3, Andrew Buerkle; Dept. 344-0, W. T. Green; Dept. 401-5, F. C. Cornish; Dept. 541-3, C. P. Merriman; Dept. 549-0, B. B. Wygant Jr.

ALTUS AFB

Twenty-year: Dept. 617-0, J. G. Miller.

EDWARDS RS

Ten-year: Dept. 575-0, R. B. Merwin.

FAIRCHILD AFB

Twenty-year: Dept. 613-0, H. L. Sterling.

LINCOLN AFB

Twenty-year: Dept. 616, R. C. Firestine.

SCHILLING AFB

Ten-year: Dept. 615-8, C. C. Chapman.

SYCAMORE

Fifteen-year: Dept. 573-0, C. W. Graser.

WARREN AFB

Ten-year: Dept. 611-6, P. R. Merritt.

Births

MAIN PLANT

DAVILA—Daughter, Amada Yalanda, 4 lbs., 6 oz., born Aug. 11 to Mr. and Mrs. Edward Davila, Dept. 451.

GALLAGHER—Son, Andrew Christopher, 7 lbs., 1 oz., born July 28 to Mr. and Mrs. W. C. Gallagher Jr., Dept. 322-4.

HEITMAN—Daughter, Lori Lyn, 7 lbs., 13½ oz., born Aug. 17 to Mr. and Mrs. R. R. Heitman, Dept. 220-4.

Deaths

MAIN PLANT

ELLIS—Charles C., Dept. 321-7. Died Aug. 26. Survived by mother, Edna L.

LINCOLN AFB

KEYSER—Arlyse J., Dept. 616. Died Aug. 26. Survived by daughter, Mora Ellen, 11.

VANDENBERG AFB

ANDERSON—Samuel H., Dept. 576-4. Died July 26. Survived by daughter and son.

General Dynamics NEWS

Successor to "Convairiety" (which for 13 years served plants of the former Convair Division of General Dynamics Corporation), West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

Approximate current total circulation, over 70,000.

Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRowning 7-8900, ext. 3322. Staff: Bryan Weickersheimmer, news editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

City College Courses Begin, Tuition Low

Fall San Diego City College courses, offered before and after work hours for first and second shifters, opened this week at General Dynamics/Astronautics.

Taught in Bldg. 17 and Bldg. 4 facilities of educational services at the main plant, the courses will be open to new students for a limited time. Students may enroll by calling Doris at ext. 1933 or by attending specific classes. Total cost per class is $1.50. Some classes carry City College credit.

Blueprint Reading is offered from 4 to 6 p.m. Monday and Wednesday and Tuesday and Thursday; and from 2 to 4 p.m. on Tuesday and Thursday.

Basic Electronics will be taught from 2 to 4:30 p.m. on Monday and Wednesday; 5 to 7:30 p.m., Tuesday and Thursday; and 4:30 to 7 p.m. on Tuesday and Thursday.

Electronics may be taken from 4 to 6:30 p.m., Tuesday and Thursday and 4:30 to 7 p.m. on the same days.

Numerical Control #1 meets from 5 to 8 p.m. each Tuesday. Advanced or Numerical Control #2 meets from 5 to 8 p.m. on Wednesday.

Optical tooling is offered from 4 to 6 p.m. on Tuesday and Thursday and A/C Shop Math from 4 to 6 p.m. on Tuesday and Thursday.

All courses are taught by GD/Astro instructors.

Heller Elected SPA President

W. B. Heller of General Dynamics/Convair systems and procedures (Dept. 8-4) assumed duties as president of San Diego Chapter of Systems and Procedures Association at first meeting of the 1960-61 year last night (Sept. 12).

Other General Dynamics men serving as officers during the current year are J. J. Ireland, GD/Convair Dept. 8 supervisor, vice president; and Ward Soulé of GD/Astronautics systems and procedures, secretary.

Heading committees are five GD/Astro men: James W. Burns, B. S. Gamson, R. M. Hanna, J. A. Moore, and P. D. Neiswender.

Anyone interested in attending meetings, either as visitors or as members, may obtain information from any of the General Dynamics personnel, said Heller, who may be reached at ext. 2241, Plant 1.

Composite Co. Open To Navy Reservists

General Dynamics employees in the San Diego area who are members of the Navy's inactive reserve are being invited to train with Naval Reserve Composite Co. 11-1.

Lcdr. Fred Jaeger (AF employee at Astronautics) is heading the drive for new members. Open to all ranks, rates and classes, Co. 11-1 meets at 7 p.m. each Wednesday at the Naval Reserve Training Center, off Harbor Drive. Call Jaeger at ext. 3174 for details.

Keith Clark Named Publications Chief

Keith R. Clark has been appointed General Dynamics/Astronautics chief of support publications by E. A. Reynolds, director of product support. He relieves G. R. Spitzer who has left the company.

Clark was born in Canada and came to this country as a child. He is a graduate of Wesleyan University, Middletown, Conn.

Before joining GD/Astronautics this February as support publications general supervisor, he was with the Martin Company, Baltimore, Md.



PROCUREMENT—Key men in GD/Astronautics' procurement activities compare notes. Seated at left is F. J. Traversi, director of material, and seated right is C. G. Keach, manager of procurement. Others, from left, are D. D. Knapp, C. T. Talbot and W. S. Tucker, general purchasing agents. Latter is new appointee.

Procurement Duties Reassigned; Tucker New Purchasing Agent

Appointment of a new general purchasing agent and reassignment of responsibilities within procurement operations at General Dynamics/ Astronautics have been announced by F. J. Traversi, director of material.

W. S. Tucker is the new appointee.

Tucker, C. T. Talbot and D. D. Knapp, also general purchasing agents, report to C. G. Keach, manager of procurement.

Tucker is now responsible for three purchasing agents and their respective groups. Included are J. C. Dingham for aerospace ground equipment, specification control items and cable assemblies; J. B. Gerding for outside production and research and special projects; and E. J. Bryant for cryogenic and Centaur systems and depot repair.

Knapp has taken over activities associated with procurement for base activation. Reporting to him are C. K. Murray, purchasing agent for operational base activation procurement; and I. T. Emley, purchasing agent for research and development bases and trainer base activation.

Talbot's organization remains the same with C. C. Farnsworth, purchasing agent for raw materials, hardware, supplies, equipment, technical data, facilities, leases and services; R. W. Harris, purchasing agent for electronic and electrical components; and R. E. King, purchasing agent for propulsion, pneumatic and hydraulic components and spare parts.

Toastmasters Set Election

Convair Toastmasters #457 will elect a new slate of officers at their next Monday (Sept. 18) dinner meeting in the Convair cafeteria executive dining room.

Andrew Gormish and Keith Blair, as nominating committee, will present nominees for club posts.

Tom East (Dept. 6) will be toastmaster during the evening's program centered around the main theme, "Education."

At next week's regular session Sept. 25 Bill Duerksen will assume toastmaster duties with speeches to deal with the military situation, domestic and foreign.

Convair Toastmasters and their guests will be attending the Area 5 award banquet Sept. 30 at Mission Valley Inn. Best club in the area will be named at that time by Gormish, Area 5 governor.

Reservations are to be made through Gormish, ext. 2272, Plant 1. Dinner is $3.25 each. A cocktail hour will precede the 8 o'clock banquet and program.

BASE ACTIVATION POSTS APPROVED

Organizational changes within base activation departments at General Dynamics/Astronautics have been announced by J. R. Dempsey, president.

E. J. Huntsman has been named base activation manager for both "E" and "F" series Atlas operational bases.

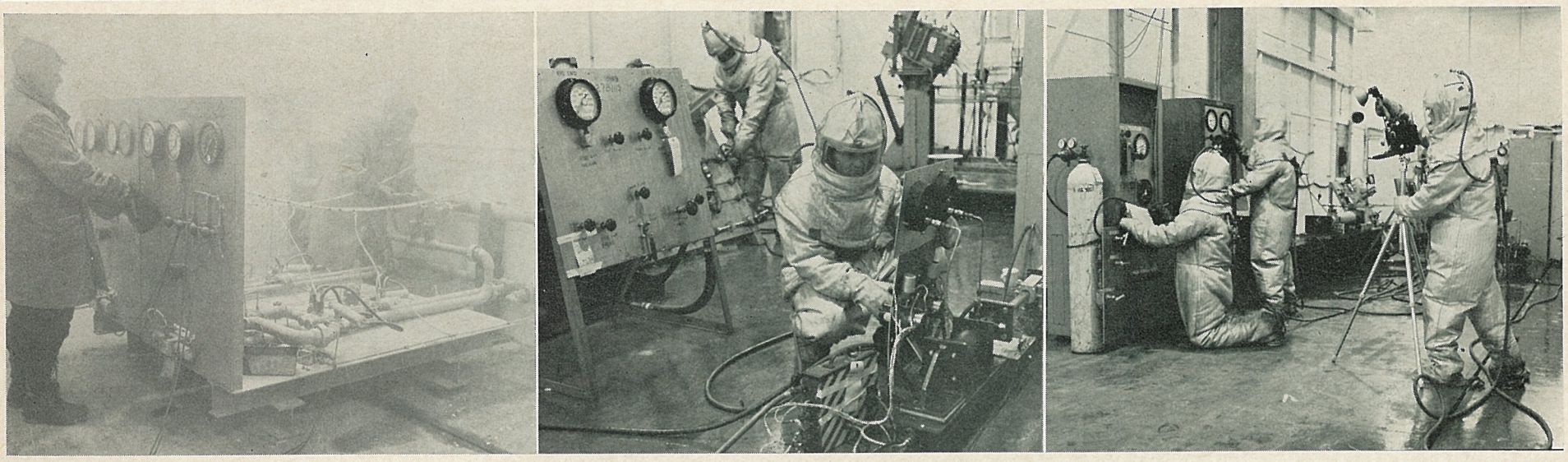
Activation and operations planning (Dept. 606) has been shifted to tooling department with C. C. Pope, general supervisor, reporting to G. A. Grossaint, superintendent of tool engineering.

Activation tooling under A. E. Williams, supervisor, also moves to tooling under H. J. Sumner, general supervisor, tool design and control.

Activation projects (Dept. 604) and activation operations (Dept. 605) are now under J. S. Harrison, base activation administration manager.



NEW POSTS—Larry Lawson (left) of GD/Convair and Art Wood of GD/Astronautics assume new positions as vice president and president of San Diego Area Council, National Management Association, at first officers' meeting last month. Both are past presidents of respective division Management Clubs.



WEATHER GAMUT—"Shroud environmental chamber" permits GD/Astronautics to produce variety of weather extremes. In center photo, high humidity (over 95 per cent) is achieved, while at left parka-clad technicians manipulate valves at 65 degrees below zero. At right GD/Astro Lensman Walter Gault dons "hot suit" for photo assignment. Incidentally, if desired, chamber can "rain" at rate of five inches an hour!

Unique 'Gas Freezing' Know-How Developed by GD Engineers

Feasibility of a revolutionary method of eliminating rocket gases from chambers which simulate the conditions of outer space was developed by General Dynamics/Convair engineers during a year-long subcontract just concluded for its sister division, General Dynamics/Astronautics.

This work, which has resulted in recent modification of General Dynamics/Astronautics huge space chamber, will duplicate the environment of outer space. The cryogenic pumping system, as it is called, will, when put in use, eliminate all the gases emitted during the dynamic testing of small rocket engines within the chamber. This permits rocket engine operation in the simulated low pressure of outer space.

"Results of this work place General Dynamics/Convair's knowledge in the cryo-pump area ahead of the space chamber industry," said C. L. Jackson of General Dynamics/Convair who headed this program.

"The challenging engineering aspects in development of this system made the task particularly inviting. Further, it offered General Dynamics/Convair an opportunity to increase its technical capability in this rapidly expanding cryogenic field," he continued describing the orginal contract. This was obtained for General Dynamics/Convair through a perimeter engineering sales effort in the spring of 1960.

"Although the principle of cryo-pumping is not new, application of the cryo principle for removing large quantities of gas from a relatively low pressure region on such a large scale has never before been accomplished," he said.

(The cryo-pump principle is the freezing of gases into ice thereby creating an evacuated area.)

Present modification of the chamber, completed last month, does not so far include the cryo-pumping system, but design provisions are such that modifications can be made incorporating the cryo-pump capability at any time, he explained.

Modifications as they now stand, add a 5,000-gal. insulated storage tank for liquid nitrogen, provision for liquid hydrogen, a cold wall within the chamber, the automatic operational control system, and all interconnecting systems.

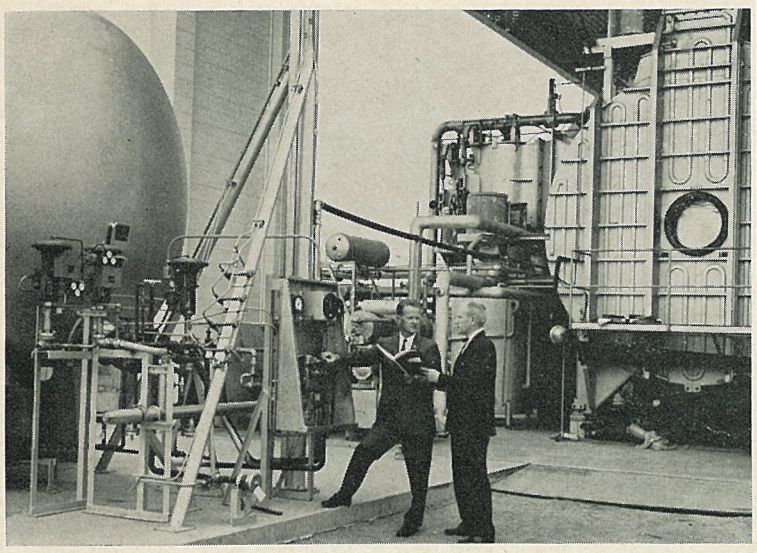
"The facility now provides an environment of very low pressure and cold of outer space, and the solar radiation of the sun—conditions like those found at high altitudes (up to 100 miles). The liquid nitrogen pumped through the cold wall lining brings the temperature in the chamber to as low as —320-degrees F. When liquid hydrogen is used it will produce a temperature of —420-degrees F.," said O. O. Haroldsen of General Dynamics/Astronautics aerophysics laboratory which directs space environment testing.

"One of the most remarkable achievements in the entire program was fabrication and installation of the cold wall assembly inside the vacuum chamber. This work involved some 600 weldments and connections within the evacuated area, which when exposed to high vacuum during initial tests, operated with zero leakage. This is very much like building a prototype airplane which required no changes after its first flight test," said Jackson after checkouts of the new installation. This fabrication and installation was done by experimental factory under the direction of N. R. Keough, general foreman, and John Wasem, assistant foreman.

When this project was first initiated a year ago at General Dynamics/Convair, Jackson was given divisional responsibility to head an internal project team. Key members were: J. W. Anderson, engineering technical; M. A. Grove, material; N. O. Loven and R. H. Hurd, engineering design; Keough, manufacturing; H. A. Smith, plant engineering; T. P. Solberg, accounting; E. J. Steeger, engineering test; G. R. Vetter, contracts. R. E. Pearce of engineering assisted Jackson throughout the program.

Haroldsen monitored design, development, and installation at the Astro site.

Credit is due all team members for success of the program, said Jackson.



SPACE ADVANCE—C. L. Jackson of GD/Convair and O. O. Haroldsen of GD/Astro inspect equipment recently installed by GD/Convair at GD/Astro's Kearny Mesa research laboratory site to advance capability of huge space chamber (far right).

Coast Will Return To Standard Time

California plants of General Dynamics Corporation will return to standard time the last Sunday in September (Sept. 24). Clocks will be put back an hour at 2 a.m. of that day.

Hustler No. 21 'Graduates' to Striking Force

Production conversion B-58 No. 21 joined 43rd Bomb Wing's tactical striking force this month following a successful four-hour acceptance flight.

Lt. Col. W. R. Griner, pilot; Capt. R. E. Simmon, bombardier-navigator; and Capt. P. P. Markum made the flight to Carswell AFB.

Another production conversion Hustler—No. 27—completed company flights this month and was being readied for Air Force acceptance flights.

No. 27 is scheduled for delivery to 43rd Bomb Wing in September. This will bring the conversion program to a halt "for the time being."

No. 22, last of the test Hustlers slated for conversion to tactical status, is still being used by Air Force at Edwards AFB to demonstrate flight characteristics using the two-component pod. A return date has not been established.

Thus, delivery of No. 27 this month virtually winds up the conversion program—on schedule.

"Splendid cooperation from Dept. 63 supervision, quality control and Air Force people, and from personnel in departments involved is helping us to finish on schedule," said C. N. White, superintendent B-58 product field operations.

DEANE DAVIS CITED FOR 'PROJECT SCORE'

An Air Force citation for his part in "Project Score" has been awarded Deane Davis, General Dynamics/Astronautics chief project engineer for Centaur.

The "Score" project involved the "talking satellite" which broadcast President Eisenhower's Christmas message in 1958.

The citation, presented by Lt. Gen. Bernard A. Schriever, Commander, Air Force Systems Command, praised Davis' "outstanding technical ability, inspiring leadership and selfless devotion to duty," and stated that his accomplishments "reflect great credit upon himself and his company."

GD/Astro Son Tapped For Naval Academy

A presidential appointment to the U. S. Naval Academy, Annapolis, Md., has been received by John Paul Grando Jr., son of GD/Astro's J. P. Grando, Dept. 141-1.

Young Grando will graduate from Kearny High School next June, and report to Annapolis a few days after his 18th birthday in July. His father, who retired from the U. S. Marine Corps as a captain, is a former Marine aviator.

Astro Technicians Don 'Hot' and 'Cold' Costumes For Weather Testing

Silo launch equipment similar to that being installed in Atlas bases across the nation recently ran a gamut of weather conditions in a week-long series of tests conducted by General Dynamics/Astronautics.

The test items, with support equipment to help them duplicate their normal functions, were alternately cold (minus-64°), hot plus-165°), and humid (95 per cent) in an around-the-clock 15-test program conducted at the Point Loma Test Site, San Diego.

Tests were held in GD/Astronautics "shroud environmental chamber" which is large enough to test an entire Atlas missile and its handling trailer, but is also utilized for component testing.

Behind the program were Air Force qualification tests to prove the parts being tested would stand up and operate under extremes beyond those normally encountered at launch site. To be answered were such questions as: would lubricants perform equally well in sub-zero temperatures and extremes of heat and humidity? Would the expansion and contraction of metals under these conditions alter the part's effectiveness? Would gaskets continue to function under varying conditions?

To perform the tests, GD/Astronautics technicians were forced to move into the chamber and operate equipment. They wore foul weather gear for cold and special asbestos suits complete with air lines for cooling and breathing under conditions of intense heat and humidity.

Jay Lynch, test engineer, and Julian Gotkiewicz, both Dept. 565-3, conducted the program.

R. C. Hinck, Dept. 566-1 group engineer, heads Point Loma operations, with William Valentine, foreman; Jim Thornton and V. H. Lowe, assistant foremen, both Dept. 756, in charge of environmental testing.

Mfg. Research Team Attacks And Solves Production Hitch

In addition to the steady stream of new devices and techniques constantly evolved by General Dynamics/Astronautics applied manufacturing research and process development (Dept. 290), the group is often called upon to investigate production trouble spots.

A capable staff of Dept. 290 specialists in electronics, welding, metallurgy, chemicals, plastics, materials and packaging stands ready for consultation to expedite achievement of efficient, on-schedule production.

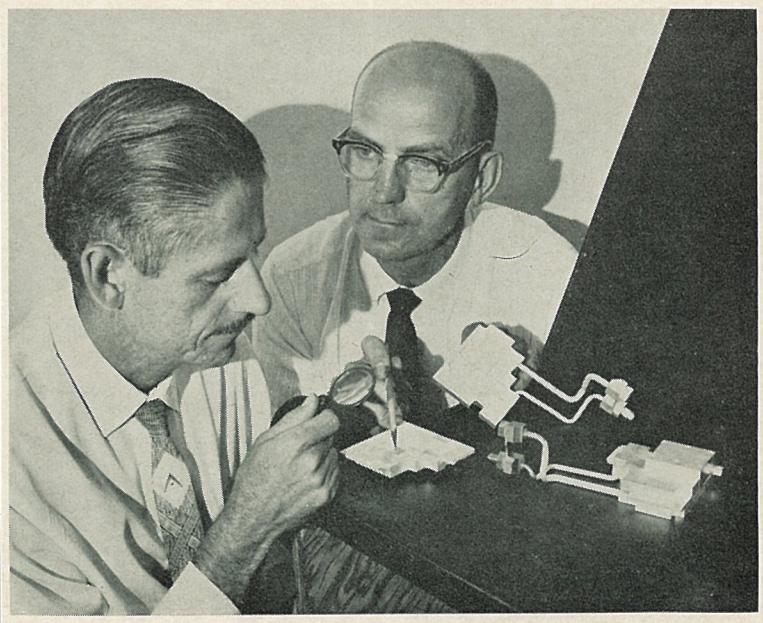
Recent example of the service provided is seen in the case of an electronic component for GD/Astro's Azusa tracking system.

An electrolytic copper water jacket component for Azusa was electroplated with silver prior to final assembly. It was noted that the silver plate had a tendency to peel off during subsequent soldering operations. Production ground to a halt, and a team from applied manufacturing research and process development tackled the problem. They recommended that the component be plated with a thin layer of nickel before the silver plating stage.

The peeling problem was eliminated.

But study did not stop there. At present, extensive research is being pursued on a process of silver brazing to replace the soldering step.

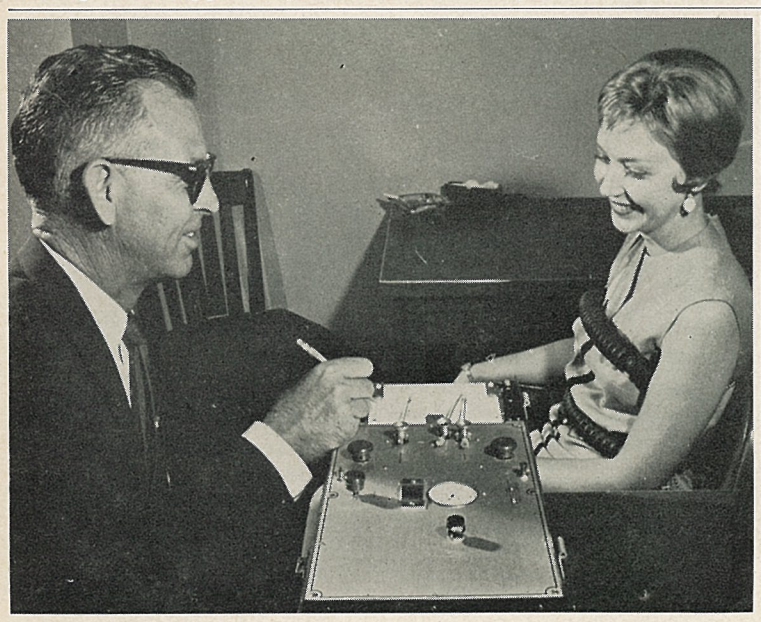
Goal? A more reliable product.



CLOSE LOOK—Ozzie Sotirhos, GD/Astro materials process engineer, examines plated water jacket component as C. P. Rolla, Dept. 290, explains how applied manufacturing research team solved plating problems on item.



STEEP TRAIL—Young mountaineers of GD/Convair Management Club-sponsored Explorers Squadron 340 assemble packs (far left) and take breather before daily onslaught on rugged High Sierra mountain passes (center). At right, trail break rests weary feet during two-week mountain climbing trek. Five 12,500-ft. passes, some inaccessible without ropes, were scaled. Day's stints averaged 5 to 15 miles, depending upon heights attacked.



PREVARICATING PAT—Lie-detector needles danced dizzily when pretty Pat Pierce, GD/FW Dept. 8, answered "yes" to question: "Are you Doris Day?" Interrogator is L. D. Criswell of GD/FW Dept. 28, polygraph expert.

To Tell the Truth

Part-Time Polygraph Hobbyist Says Even White Lies Don't Pay

A lie-detector does lie—but not very often—according to L. D. Criswell, General Dynamics/Fort Worth process analyst and part-time polygraph expert.

"Mental cases, alcoholics and dope addicts can sometimes fool the machine because their nervous systems differ from the normal person's," Criswell said.

"But the normal person has no control over his nervous system, and when he's not telling the truth it shows up on the machine as increased blood pressure or blood flow, or a change of heart beat."

A few individuals, improperly questioned, are capable of rationalizing a "correct" answer.

"When a suspect in a murder case answered 'no' to the question 'did you kill your girl friend, Mary?'" the machine showed him to be telling the truth. But the man was later convicted on overwhelming evidence."

How did he "outwit" the polygraph? "Well," the convicted man admitted, "at the time of the murder, I had two girl friends named Mary."

Pathological liars, people who delude themselves into believing their own untruths, have also been known to fool the machine in rare cases.

But these are exceptions. Approximately 97 per cent of all people cannot fool the machine with the tiniest "white" lie.

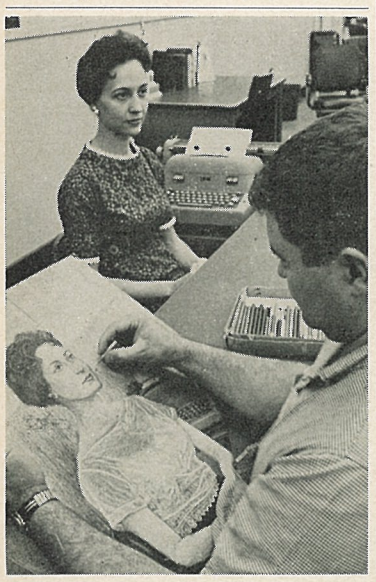
His interest in this hobby dates back to 1947, when he and about 500 other Atomic Energy Commission security officers were routinely tested.

Nowadays, his work in the field is limited to frequent calls from county officials and occasional demonstrations, which often produce interesting results.

At a Lion's Club demonstration he asked a young lawyer who spent much of his spare time filing income-tax returns, "Have you ever fudged a little on an income tax return?" The answer literally put the delicately balanced lie-detector out of commission!

While many of Criswell's efforts have helped establish innocence, his altruistic efforts sometimes backfire.

Criswell worked many months to set up a test for a life-termer who incessantly claimed his innocence. "The man was so convincing it took almost an hour to decide he wasn't telling the truth," he said.



LUNCH PORTRAIT—Carl Ronald Thomason, GD/FW Dept. 6 engineering illustrator, is also gifted portrait painter. Above, he completes color portrait of Roberta Chisolm, secretary, during lunch period.

ALLWARDT TRANSFERS TO ASTRO DIVISION

V. L. Allwardt, chief of engineering flight test at General Dynamics/Convair, has transferred to General Dynamics/Astronautics, effective last week.

Allwardt joined Convair division in flight research in 1943 and moved to Edwards AFB as flight test group engineer at the Convair facility in 1953. He was chief flight test group engineer there from 1955 until he succeeded G. E. Putness as project manager two years later.

He returned to San Diego in late 1959 as senior flight test group engineer in the commercial transport program.

'Thrilling'

Plane Piloted To Safe Stop In Vacant Lot

"Really thrilling," is the comment of Hans Busch, General Dynamics/Astronautics task control planner (Dept. 521-2), who brought his disabled aircraft in for an emergency landing in a vacant lot recently.

But when Busch says it, he refers not to the hair-raising landing, but to the response of bystanders — perfect strangers — who helped prepare the ship for its return to the airfield.

The adventure started shortly after noon on a Sunday. Busch had lifted his Stinson Voyager from Montgomery Field and climbed to 400 feet when the engine suddenly slowed to idle speed.

"I advanced the throttle and applied carburetor heat—all the standard procedures," said Busch. "Nothing helped."



BACK IN ACTION — Hans Busch sits in cockpit of Stinson Voyager in which he made recent forced landing in Linda Vista lot.

Nearest spot for a forced landing was a Linda Vista school yard, and Busch headed for it. Then he spied a vacant lot just beyond and coaxed his sluggish craft toward it to avoid the fences ringing the school yard.

"I telephoned four or five members of my Civil Air Patrol unit," he said. "Within an hour over 15 persons, many of them strangers, were helping me drain the fuel from the plane and remove the wings.

"There were no 'bosses' on the job," he added. "They just arrived and started working. About 7 p.m., one of my unknown helper's wives even brought up food —sandwiches and lemonade."

Only six hours after the trouble started the plane was back at Montgomery Field, fully reassembled. Two days later it was flying again.

Busch, who has been in this country for 10 years, is a veteran pilot. He has flown since 1943 when he became a military pilot in his native Germany flying fighters, dive bombers and jets.

General Dynamics Sons Prove They Can Take It

Twenty-four tired, disheveled boys, all General Dynamics sons, dropped packs and headed for the showers late last month after two weeks of scrambling and clawing their way over rugged High Sierra passes.

On their first mountain trip in five years, Air Explorers Squadron 340, sponsored by GD/Convair Management Club, sought out rough regions rarely attempted by expert climbers. Thirteen of the 14 days found them above 10,000 feet, sunburned by day, shivering under ice-coated sleeping bags at night.

Gene Boyd (Dept. 197), squadron adviser, said, "It made men of us all. Every boy felt he had accomplished something worth while in proving himself."

Only those judged in top physical condition and able to take care of themselves were allowed to go. A night's stop at Edwards AFB gave them a last rest in beds before they headed into the mountains above Bishop the weekend of Aug. 4. From there they hit the trail cross-country — and cross-country meant across the rim from one high pass to another at 10,000 to 14,000 feet. For days they climbed over loose shale, around huge boulders, breaking precipitous trails, pulling themselves by ropes up sheer cliffs.

Heads were counted each night at the predetermined campsite to be sure no stragglers had been left on the trail, said Boyd. The boys, 17- and 18-year-olds (youngest was 15) split up in twos and threes to mark out their own routes, work their own ways each day across the rough country. It took eight hours to climb Harrison Pass alone.

Balanced, dehydrated meals, already packaged in plastic, were carried by each boy. Typical breakfast fare was eggs, spam, potatoes, hot chocolate. High energy lunch of peanuts, raisins, candy bar, drink was munched on the trail. Soup, biscuits, beans or stew, potatoes, salad and tea filled hungry mountaineers around evening campfires. Their second-half food supply was found hanging in a pre-arranged tree near Bullfrog, packed in from Independence.

Carrying the bare necessities, their one change of clothing was washed, along with themselves, in icy mountain streams; loose shoe soles torn by rocky trails were clamped back with small bolts; ragged pants were patched as best they could by firelight. Each boy sheltered himself from sharp winds and constant rain with ground covers and plastic sheets draped over trees and rocks as rude tents.

"All showed most amazing morale," praised Boyd, who with Bill Aston (Dept. 138) made the over 100-mile trek with the boys. Third adult leader, Jim Megargee (Dept. 48), was only casualty. He was packed out midway when his feet became too sore to travel.

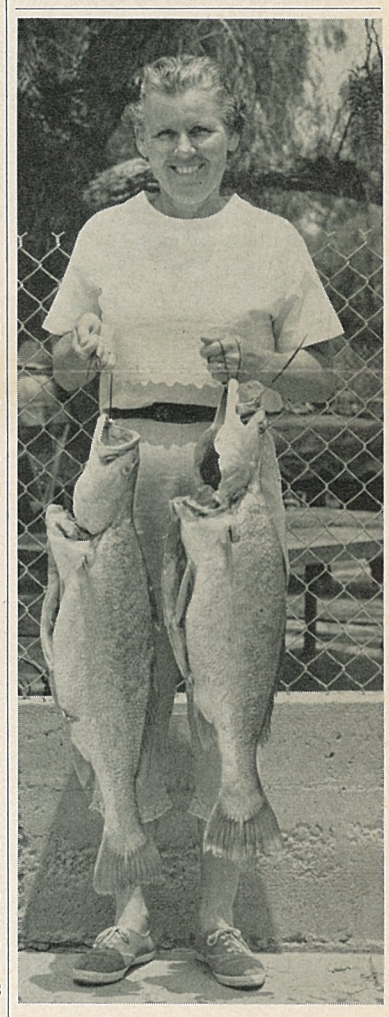
"By the time we ended the trail at the foot of Mt. Whitney we felt each had passed the supreme test of leadership, ability, calmness, and courage," Boyd summarized.

Next year's rough summer outing will take the troop back to the rapids of either the Rogue or Snake Rivers, with another mountain jaunt the following year.

Recreation associations at GD/Convair and GD/Astronautics chipped in to pay expenses above the $25 each boy paid for his own food supply. Medical supplies for emergencies which never came were sent along by the company.

PROCESS ANALYST FINISHES COURSE

Howard E. Pohlenz, GD/Astro Dept. 270-1 process analyst, recently completed a 10-day course in statistical methods in industry at the University of California, Los Angeles.



GOOD CATCH—Ruth Menzie, wife of GD/Convair's Bob Menzie, holds big corvina pulled out of Salton Sea, Calif., recently.

FEMININE ANGLER LANDS BIG CORVINA

General Dynamics anglers in California looking for good fishing spots are turning more and more to Salton Sea, Bob Menzie, CRA Fishing Club commissioner, reports.

His wife, Ruth, pulled in a couple of big corvina to take a top club award recently. Her double catch weighed 12½ and 13¼ lbs. respectively and measured about 30 inches long.

She caught them on a 25-lb. monofilament line using mud-suckers for bait.

Corvina, native of the Gulf of Mexico, were transplanted to California's inland sea about five years ago and get as large as 40 lbs., said Menzie. However, the record weight of any registered with the Southwest Anglers Association is 15 lbs., 3 oz.

Besides corvina, other good eating fish in the sea include the smaller sargo, which runs to around 12 inches in length.

GD/Telecommunication Division Created With Rochester Hdq.

NEW YORK—General Dynamics Corporation has announced formation of a new division, General Dynamics/Telecommunication.

The new division, headquartered in Rochester, New York, produces the Stromberg-Carlson line of telephone equipment for the independent telephone company industry. It was formerly a part of General Dynamics/Electronics.

"In view of the growing importance of the corporation's telephone business," Frank Pace Jr., chairman of General Dynamics Corporation, said, "this division now merits independent status."

John H. Voss, general manager of the telecommunication operation for eight years, has been appointed president of the division and senior vice president of General Dynamics.

In a related move, the corporation announced the unification of the remaining operations of General Dynamics/Electronics with those of General Dynamics/Pomona.

General Dynamics/Electronics, which has operations in both Rochester and San Diego, Calif., produces electronic equipment for defense, industry and the home. General Dynamics/Pomona, headquartered in Pomona, Calif., produces the Advanced Terrier, Tartar, Redeye and Mauler missile systems, and advanced defense electronics systems.

The combined operation will be headed by Charles F. Horne as president. Horne is president of General Dynamics/Pomona and senior vice president of General Dynamics.

"This most recent move," said Pace, "is a continuation of the consolidation of electronic activities begun earlier this year. By combining the direction and competence of these two electronics-oriented divisions, we feel we can strengthen our position in a fast-moving industry both in end products and in support operations to weapons systems to provide more rapid development and greater flexibility."

Pace emphasized that existing operations will be continued at their current geographical locations.

Cards Distribution 'Wild' in Pinochle

The cards went wild while Matthew Fuller, GD/Astro Dept. 771-0, his parents and sister were playing pinochle the hard way (with two decks and no nines) recently.

Diamonds were trumps, and after all meld was on the table it was discovered that each player had a complete run in that suit: an ace, king, queen, jack and ten each.

Vultee Reunion Set For Oct. 21

Notices went out this month to 900 Vultee Field veterans scattered over the country from Long Island, N. Y., to the West Coast reminding them of their 14th annual reunion, Oct. 21-22.

Wes Magnuson of General Dynamics/Astronautics, heading the committee, said 100 replies had been received by last week with more coming in every day.

Site of the annual get-together to reminisce over old times will be the Town and Country Hotel in San Diego's Mission Valley.

On the Saturday program is swimming, games in the afternoon; cocktails and dinner, 6 to 8 p.m.; a men's gabfest at 8:30 p.m.; fashion show for the ladies from 8:30 to 10 p.m.

Helping Magnuson with arrangements are Earl Williams, Art Braidic, Pete Nagy, Norvel Jones, all of GD/Astro. H. A. Smith, GD/Convair chief plant engineer, will head the reception committee.



COMBINATION—XP-81 (first flown by Frank W. Davis, now GD/FW president) bridged shift from propeller planes to jets. It used both types of power.

They Sprouted

Pioneers of '40s Sowed Seeds That Grew Into Deltas of '50s

(This is installment No. 67 of a continuing narrative dealing with General Dynamics products of the past. In the years which this installment touches upon Vultee Field was a division of Consolidated Vultee.)

Vultee Field had "worked itself out of a job" by mid-1944. Manufacture of basic trainers for the Air Force and Navy stopped when the Downey, Calif., assembly line had produced more than 11,000. A reduced factory force turned to making components for planes in production at other plants.

The engineering staff tackled a broad array of research and development projects in new fields—supersonic flight, rocket propulsion, missile guidance. From pioneering work at Vultee Field in 1945-46 came the world's first delta wing aircraft (XF-92, F-102) the western world's first supersonic bomber (B-58), the Navy's first operational anti-aircraft missile (Terrier) and developments leading to the first intercontinental ballistic missile (Atlas).

A research project already under way bridged the shift from propeller-driven planes to craft powered by reaction motors. The XP-81, conceived in 1943 and flown in 1945, used both turboprop and independent jet. An all-jet design followed in 1944-45, a proposed Navy night fighter powered with three turbojet engines and having the high subsonic speed of 561 mph.

Early in April, 1945, this entry appeared in the weekly Vultee Engineering Reports: "Work has just started on possible airplanes for supersonic speeds . . . A turbo rocket powered plant seems the most promising at present. Practically no aerodynamic data is available in this speed range, and what there is isn't consistent."

(This was two and a half years before man's first supersonic flight, in the Bell X-1 rocket plane at Muroc, Oct. 17, 1947.)

The Air Force announced a competition in September, 1945, for a supersonic interceptor, capable of climbing to 50,000 feet in four minutes and attaining a speed of 700 mph. At Downey the design problem was turned over to Frank W. Davis, then assistant chief engineer; Adolph Burstein, chief of design; Ralph H. Shick, chief of aerodynamics. Their studies produced a proposal that won a contract in May, 1946, for two airplanes. The design incorporated a swept wing, V-tail and ducted rocket (ramjet) power plant with external liquid rocket motors for takeoff and climb and an auxiliary turbojet for subsonic cruising.

It soon became evident that two problems would have to be separated and solved independently—design of the unique power plant and development of a supersonic airframe. In November, 1946, the XP-92 contract was amended to provide two programs. One led to extensive laboratory and wind tunnel experimentation with ramjet burners and gasoline-oxygen rockets. A design configuration incorporating these elements reached mockup form in 1948. The other program was confined to aerodynamics and led to the delta-winged interceptors of the '50s.

The XP-92 airplanes (USAF switched from "P" to "F" for fighter designation in 1948) were never built, but an offshoot became the XF-92.

XP-92 design novelties included placement of a pressurized cockpit within the ramjet spike diffuser and the forward section of the fuselage was arranged as a breakaway capsule for emergency escape at high speeds (the design maximum being 1,165 mph at 50,000 ft.) A parachute was designed to lower the capsule to a safe altitude for bailout.

The power plant, fueled with gasoline and liquid oxygen, would have combined four exterior rocket motors (4,000 lbs. thrust each) and a ramjet fed through 16 injector rings, coupled with 16 "peanut rockets" (50 lbs. thrust each) to serve as igniters and provide additional thrust. An Offenhauser engine, modified to take combustion air from the Lox supply, was developed as a 120 hp auxiliary unit to drive generator and fuel pumps.

Because of wide disparity between takeoff and landing weights, (due to large fuel consumption), a takeoff cart was designed. It would brake itself to a stop after the plane became airborne. Light tricycle gear was designed for landing only.

Active Roles Assigned GD Men at SAE Meeting

Eighteen men from four divisions of General Dynamics Corporation are scheduled to take part in the Society of Automotive Engineers National Aeronautic and Space Engineering and Manufacturing meeting Oct. 9-13 in Los Angeles.

Participating from General Dynamics/Astronautics will be: Larry Granstedt, chief tool engineer, forum panel member; V. G. Melquist, manager of manufacturing development, forum secretary; C. C. Campbell, supervisor of reliability testing, will deliver paper; J. F. Watson, staff scientist, forum chairman; J. C. Fischer Jr., senior flight test engineer, will deliver paper; and Carl Priest, specifications group engineer, panel member.

Those from General Dynamics/Pomona will include: H. E. Jordan, design group engineer, forum co-chairman; H. F. Sawyer, design specialist, forum secretary; E. D. Heller, value control coordinator, forum chairman; A. H. Dunn, manager of applied manufacturing research and process development, will deliver paper; and T. A. Vogel, senior design group engineer, panel member.

Participants from General Dynamics/Convair include: E. W. Fedderson, director of manufacturing development, forum chairman; J. H. Famme, division general manager and vice president, forum chairman; R. D. Small, group engineer, and G. F. Campbell Jr., design specialist, will deliver a joint paper; and P. E. DiBartola, senior engineer, will deliver a paper.

L. M. Smith, structure group engineer, who will deliver a paper, is the representative of General Dynamics/Fort Worth.

GD/Astro Son Chosen For Scholar Honors

Anthony Tafoya, son of Tony (Dept. 771) and Teddy (Dept. 220-1) Tafoya of General Dynamics/Astronautics, has been awarded a three-year scholarship at the University of Santa Clara.

His scholarship was awarded by the State Scholarship Commission. Tafoya will major in physics.

EL MONTE PICNIC

General Dynamics employees in the San Diego area who are former residents of Wisconsin are sought for a third annual picnic at El Monte Park Sunday, Oct. 1, from 10 a.m. Information is available from Mary Campbell, group president, at Astronautics, ext. 2303.

DIVISIONS CONFER ON COST REDUCTION

An inter-division conference on the Employee Suggestion and Cost Improvement Proposal plans was conducted Aug. 28 at General Dynamics/Pomona.

Objective of the conference was to discuss problems common to all the participating divisions and to recommend solutions. Subjects discussed included inter-division interchange of suggestions and their handling, handling of suggestions involving classified information, priority of suggestions, performance reports between divisions, suggestions dealing with union negotiations, and handling of suggestions requiring corporate action.

Participating in the conference were: M. J. Scott of General Dynamics/Fort Worth, A. R. Mosco of GD/Astronautics, and J. M. Langendoen, R. W. Anke and F. J. Fuller of GD/Pomona.

Truck Purchased With Con-Trib Funds Helps Unemployed in Spare-time Work

A truck, bought with funds from General Dynamics/Convair and General Dynamics/Astronautics Con-Trib-Clubs, is helping men from correctional institutions keep working while they look for permanent jobs.

Cost of a three-quarter ton stake-body truck was divided between the two Con-Trib-Clubs to continue the non-sectarian work project of the Episcopal Community Service. Each donation amounted to $1,231.

During the last four years the project has provided temporary work for men discharged from County Honor Camps until they find permanent employment. Over 400 men were helped out with odd jobs last year, said Rev. A. C. Elcombe, director of the service. The new truck replaces an outworn one used to haul men and tools to such part-time work as painting and repairs, window washing, yard and garden upkeep.

A letter from the Rev. Elcombe said, "I wish we could personally convey our thanks to the employees from whom this money comes."



SUGGESTION PARLEY—Representatives of three General Dynamics divisions were present Aug. 28 at Pomona for conference on common problems relating to Employee Suggestion and Cost Improvement Proposal plans. Around table, from left: F. J. Fuller and R. W. Anke of GD/Pomona, M. J. Scott of GD/Fort Worth, and A. R. Mosco of GD/Astronautics. Not shown: J. M. Langendoen of Pomona.

FORMER NORTHROP STUDENTS CALLED TO ALUMNI PICNIC

General Dynamics employees who are former students of the Northrop Institute of Technology are being sought for an Alumni Association picnic Sept. 24 at Felicita Park, Escondido.

Prof. J. R. Evans, national executive secretary of the group, will speak.

Of some 80 members of San Diego area group, more than 80 per cent are employed by General Dynamics/Convair and Astronautics.

Picnic time, with each family bringing its own lunch, is 11 a.m. Information is available through Ralph A. Sheheen, ext. 2491, or Robert Briggs, ext. 2886, both of Astronautics.



WHEN I SAY GO!—Typical of increasing number of departmental picnics in ARA Recreation Area is this one. Kids, children of Dept. 579-5 employees, receive instructions for race, one of many events enjoyed by 90 persons Aug. 5—Photo by D. O. Jones.

Checkouts Softball Club Wins GD/Astro Crown

A hard-hitting Dept. 773 team, the "Checkouts," romped through first and second shift competition to win the GD/Astro plant softball championship series.

In second place were the second shift champions, "Los Tigres," representing Dept. 220.

Play in the annual ARA competition extended throughout the summer with the new champions' closest brush with defeat coming in late May in a tie game with the "Chasers." In the three-way play-off for first shift honors, Checkouts edged an inspection team 2-1 and then downed a depot squad 10-8 in the finals.

Los Tigres downed the "Tippers," a Dept. 461-462 club to win second shift honors and enter the two-of-three game plant championship round.

At their first meeting, Los Tigres took an early lead over Checkouts, running up an 8-2 score by the 5th inning. With relief pitcher Ed Ulfers on the mound, Checkouts made a strong comeback, however, to end the game with a 12-8 victory.

The final bout scheduled Sept. 3 was anti-climactic as Los Tigres failed to field a team and lost by forfeit. Ironically, in an unofficial practice game played in lieu of the forfeited event, Tom Franklin, Los Tigres' manager, threw a no-hit game.

As plant champions, Checkouts will receive the perpetual trophy with individual awards. The team was managed by D. G. Easler. A team trophy will go to Los Tigres as runners-up.

J. T. McPherson, ARA commissioner, has commended all who participated in play. He urged that participants turn in softball equipment at ARA field as soon as possible, between 7:15 a.m. and 4:30 p.m.



TOP TEAM—GD/Astro plant league softball champions for 1961, Checkouts, representing Dept. 773, are shown with J. T. McPherson, ARA commissioner, left. Team completed season undefeated.

Coaches From GD/Astro and GD/Convair Lead Little Leaguers to District Title

A Rainbow Little League "All Star" team studded with young ball players from General Dynamics families fought its way far into championship competition.

The team, comprised of top players from the League's Kearny Mesa territory, was coached by Mickey McDonald, GD/Astro Dept. 603, and managed by Alfred Daniels, GD/Convair.

The young athletes won the area and district crowns, and the first game in sectional competition. They were stymied on what could well have been a trip to the Little League "World Series" at Williamsport, Pa., only when they yielded a second-round sectional game to the La Mesa "All Stars."

General Dynamics sons on the team were Michael Byerogo, son of Robert, GD/Astro Dept. 280-6; Pat Carrieres, son of Al, GD/Convair Dept. 146; Wayne Bradley, son of Guy R., retired from GD/Convair Dept. 14-9, and Pat McDonald, son of the team's coach.

President of Rainbow Little League is Stanley Cain, a GD/Convair inspector at Plant 2.



ALL STARS—Four General Dynamics sons figured on one of San Diego's top Little Leagues, coached by Mickey McDonald of Astro (far right); managed by Al Daniels, GD/Convair (far left). Sons are: bottom row, Michael Byerogo, second from left; Pat Carrieres, fourth; Wayne Bradley, fifth; top row, Pat McDonald, far right.

Dick Tobias' 78 Tops Linksmen

A 78 by Dick Tobias was low gross score in Convair Golf Club's sweepstakes at El Camino Aug. 26-27. Trailing him in the 0-13 handicap class were Bill Kennedy with 81 and Al Bezverkov with 82.

C. B. Bagaloff and Dick Reid tallied 68s for low net, followed by Ed Vidovich and Gene Velasquez with 71s and Ned Tamm with 72.

In the 14-21 handicap bracket, Bill Moon scored low gross with 86, while Jud Kenney's 88 placed second and Jim Thelen and Charles Hopkins tied for third with 90s.

Low net scorers were Hal Driscoll with 70, Bert Emerson and Owen Hasbrooke with 72s and J. Jodka with 74.

Dick Torrance held a 10-point lead among 22-36 handicap golfers, his 85 leading Frank Rodgers' 95 for low gross. Lee Woll followed with 97. A score of 69 by T. Solberg won low net, while Bill Pierce and Bob Buchholz shot 72s, and Toby Hunley and Jim Duffy tied at 74.

No sweepstakes are scheduled during September due to the GD/Astro ARA plant golf championships being held during the month at Fletcher Hills and Bonita, and GD/Convair championships.

300 Sports Drivers Expected at Rally

Some 300 sports car enthusiasts from throughout Southern California are expected to participate in the third ARA Sports Car Club's annual Photorama Rally Sept. 17.

This three-hour, 75-mile event is unique in that instead of written instructions to guide contestants over the route, "navigation" will be done by referring to a book of photographs.

Cars will leave GD/Astro parking lots at 1 p.m. Additional information is available from Marion Carter, ext. 2010.

The club's next business meeting will be at 7:30 p.m., Sept. 21 in ARA Clubhouse.

Cruise to Ensenada Nets Yacht Laurels

An all-Astro crew aboard the 28-foot Express Cruiser "Crabdy II" recently took second in the tenth annual San Diego to Ensenada predicted log book race sponsored by San Diego Yacht Club.

Skipper Bruce Crabtree and his wife, with crew members Mr. and Mrs. Lee Boggess made the run only two seconds off the predicted log.

And it was only Crabtree's second race in his boat!

ARA Divers to Seek Abalone on Sept. 17

This month's competition dive for ARA Astro Divers will be an abalone hunt noon to 2 p.m., Sept. 17 at Whale Point Beach. A trophy will be awarded for the five largest recovered.

A boat trip for club members only has been arranged for Oct. 1, first day of the lobster season. Plans call for a 9 a.m. departure with a cost of $1 per person.

Work Parties Form For Gym Completion

Members of ARA Physical Culture Club will press toward completion of their gymnasium in the ARA Clubhouse with two working parties from 8 a.m. until noon Sept. 16 and 23.

"Only some interior work remains," said Clyde Burkhart, ARA commissioner.

Burkhart urged club members and prospective members alike to help so the facility will be ready during the winter.

Flag Football Entry Extended

Because some teams are needed to complete both first and second shift leagues, entry deadline for GD/Astro's flag football has been extended through Friday (Sept. 15).

Two first shift leagues are planned with games after working hours Mondays and Thursdays at city recreation facilities. Each will consist of eight teams with play to begin during the last week of September.

One eight-team second shift league will be formed with games on Saturdays.

Teams from both shifts may compete by contacting J. T. McPherson, ARA commissioner, between 7:30 a.m. and 4:30 p.m. until the entry deadline. He may be reached at ext. 2819.

Paging Vecturists! You Meet Sept. 20

The numismatists and the vecturists are getting together at 7:30 p.m. Sept. 20 in the ARA Clubhouse's north meeting room.

The numismatists, naturally, are the Astronautics Coineers. The vecturists are represented by T. R. McDaniel who will speak on "Medals and Tokens" such as vecturists collect. In addition, San Diego Transit System is supplying a free collection bus token for those attending.

Cliff Writings To Be Discussed

Guest speaker at the Sept. 27 meeting of ARA Archaeology Club will be Ruth Simpson, archaeologist from Southwest Museum, Los Angeles, who will discuss petroglyphs (Indian cliff writings).

James Old, ARA commissioner, reports considerable progress at the club's excavation site above Scripps Institution of Oceanography in La Jolla.

Recently uncovered was what appeared to be a paving of rounded cobblestones. Additional study now indicates the find may be a group of closely-spaced grave markers.

"People of the type associated with this site frequently used six or seven rounded stones as 'headstones' at burial sites," said Old. "A shallow probing beneath one of the stone groupings uncovered a 'metate' or grinding stone, which was a frequent funeral offering."

Late this year club members plan to begin excavation at another site near Jacumba, recently located by Randy Miller, club president.

Master Play Bridge Set For Tomorrow

The Astro Bridge Club will stage a master play event at 7:30 p.m. tomorrow (Sept. 14) during its regular session at Barcelona Bridge Club, 4th and Juniper Sts.

Open to all employees, this event will lead to American Contract Bridge League points being awarded. Cost for participating is $1 per person.

Astro Son, 15, Wins Pitching Machine

Arthur Harris Jr., 15, brother of GD/Astro's Marilyn Harris, Dept. 130-1, was the recent winner of a baseball essay contest sponsored by a Los Angeles television station.

Arthur, a sophomore at La Jolla High School, won a baseball pitching machine and a season at a Catalina Island boys' camp for his paper on Stan Musial.

Coached by GD/Pomona's Hansen, Ball Club Wins State Crown

"Hard work and study," a success formula as old as time itself, is still an excellent rule when applied to baseball, according to General Dynamics/Pomona's W. E. "Woody" Hansen (Dept. 5).

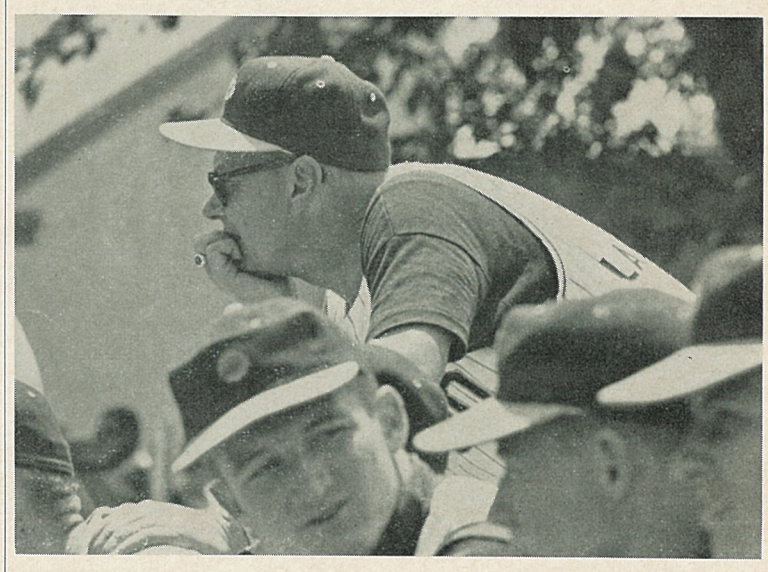
Using this rule, Hansen last month led the Pomona Charles P. Rowe Post No. 30 baseball team to the California American Legion state championship, and on to the semi-finals of the eight-state Western Regional tournament at Bend, Ore.

"Although Oregon beat us 5-4 in the semi-finals of the Regional meet, our team still played excellent ball, making only two errors in the four games we played in the tournament," Hansen said. "During our regular season we won 31 games and lost five, and in tournament play we won 11 and lost two."

Hansen, who professes a "love of baseball and a liking for working with boys," played basketball and football in high school in Nebraska, and at the same time played baseball for an American Legion team. He later played semi-pro baseball in the Mid-West. His first experience in coaching and managing a team was about eight years ago, when Carl Bruner of the Pomona Recreation Department asked him to manage a Pony League team.

About five years ago Hansen was invited to manage the Post 30 team, primarily on the basis of his Pony League record. Although this has been the team's best year, in 1959 it reached the finals of the state tournament.

To date the team has produced one professional, and a number of players have received athletic scholarships to various colleges and universities.



THE COACH—Shown in tense moment is W. E. "Woody" Hansen of GD/Pomona, whose baseball team won American Legion state tournament.

Sports & Recreation

Sq. Dance Novice Class Under Way Next Week

"Honor your partner and promenade right through—the Astro Nauts will welcome you!"

It happens only twice each year—the opening of ranks of ARA square dancing activities at General Dynamics/Astronautics to new members. One of those times is here.

On Sept. 19 and 26 and Oct. 3 Astro employees and their dependents will be welcomed at a new beginner's class set for from 8 to 10 p.m. each Tuesday over a 16 to 20-week period. Students will be taken from simple walk-throughs of basic square dances right into the most intricate steps.

Two veteran instructors, Dottie and Van VanderWalker, will again teach.

Cost per session is 50 cents per person. Initially, records will be utilized in teaching with guest callers and live music later in the course. Sandwiched in from time to time will be special parties with guest callers.

Marty Stutz, ARA square dance commissioner, indicated the classes will again be held at Jackson's Clubhouse, 4450 Alvarado Canyon Rd. (on the north access road to Mission Valley Freeway just beyond the Fairmount Ave.-Mission Gorge Rd. interchange).

No advance registrations are required. However, students can be accepted during the first three nights only, Stutz said.

Charm School Class Slated

Two self-improvement courses for women, plus a tentative class for teen-agers, will open the first week in October under sponsorship of ARA's Women's Activities Council.

The beginning courses will meet Tuesdays from 5:15 until 7:15 p.m. and from 7:30 to 9:30 p.m. over a nine-week period opening Oct. 3.

If sufficient interest is shown, a separate course for teen-agers will meet from 5:15 to 7:15 p.m. each Monday beginning Oct. 2.

Each class will be limited to 15 participants with registrations handled through ARA on a first-come, first-served basis. All employee services outlets will accept applications from employees or dependents.

Sherry Miller, experienced instructor and professional model who has taught previous classes, will again instruct. She will cover such subjects as coordination of wardrobes, makeup techniques, voice and diction.

Normally, this course would cost $155 per participant. However, under ARA sponsorship the cost is $25 each.

Astro Ham Writes Magazine Article

National recognition for a member of ARA Radio Club will be included at the group's meeting tomorrow (Sept. 14) at 7:30 p.m. in the ARA Clubhouse.

To be honored is Bill Deane (W6RET) for publication of his illustrated article on a radio construction project appearing in the July edition of "QST," official magazine of the Amateur Radio Relay League (ARRL).

Deane designed and built a mobile radio transmitter for use in his car. The July article described construction of the unit, gave directions for its use, and reported Deane's success with the equipment.

GD/ASTRO GIRL WEDS IN KANSAS

FORBES AFB—Karen Smith of GD/Astronautics Dept. 322-9 here, became Mrs. James E. Dear Sept. 2 in marriage ceremonies at Mt. Hope. Kan.

Water Skiing 'Teams' Form

General Dynamics/Astronautics water skiers will ski in small groups this fall rather than as a single club.

Bill Johnson, ARA water ski commissioner, explained:

"Trying to settle on set times for skiing over weekends only met with opposition. So we elected to break our club up into a number of small groups. Each group will be led by a responsible club member. Groups will determine when they want to ski, then reserve one of our two boats through our master schedule."

Thus, water skiers will become a unit composed of a number of small groups who will ski independently. From time to time the groups will hold club activities.

Now forming is a mid-October excursion for a weekend to Salton Sea.

Two-Hour Backcountry Trail Ride Slated

A trail ride at Tierra Ranch four miles from Ramona will be featured by ARA Riding Club at 4 p.m., Sept. 17. Trail Boss Bill Dortsch will guide riders on a two-hour backcountry tour.

Reservations and additional information may be obtained by calling Ardell Sorkness, club secretary, ext. 721. Cost is $1.50 per hour.

Also on the agenda is a working party in Recreation Area Sept. 20, and a business meeting at 7:15 p.m., Sept. 26 in the ARA Clubhouse.



WINNERS—GD/Astro Wives Auxiliary summer bowling league was won by Eline Lanc, Gail Borad and Ann Heist, shown receiving trophies from Barbara Mahaffey, director. Ann also won award for high game, while Gail doubled as high series winner. Other members of league look on.



TROPHY WINNERS—Mrs. Rufina Murillo of GD/Astro (Dept. 331-2) gets baseball pep-talk from sons Arnold, 15, and Larry, 17. Boys and brothers John L., and Hilbert (Dept. 220-2), each played on different championship ball team this season.

Diamond Stars

Four Top-Notch Ball Players Included in GD/Astro Family

When there's a baseball game in the San Diego area, chances are a General Dynamics family will be represented—in the stands or on the field.

The family of John B. Murillo, formerly General Dynamics/Convair Dept. 401, and his wife Rufina (R.C.), GD/Astro Dept. 331-2, includes four top-notch ball players: John L., 26; Hilbert, 19 (GD/Astro Dept. 220-2); Larry, 17, and Arnold, 15.

Hilbert sparked family interest in the sport at the age of 8 when he joined a Convair-sponsored Little League team coached by Pete Beyrer. He later played for San Diego City College, and is now on the GD/Astro ARA squad.

John played for many local teams and managed Little League and Pony League clubs in the area.

Larry and Arnold both play for San Diego High School, and during the summer Larry pitches for an American Legion team while Arnold slugs away in the Peninsula Colt League.

Most recent baseball laurels for the family came when the Ontario, Calif., Daily Report named Larry the outstanding player in the state American Legion tournament at Ontario.

The paper reported young Murillo as the only pitcher in the tourney to win two games, adding that he "played flawlessly in left field when not pitching."

This year, all four boys played on championship teams and each added a trophy to the family's growing collection.

"We are quite a baseball family," Mrs. Murillo sums up. "Where our teams go, my husband and I are there, if at all possible."

Group Excursion to Big Bear Will Be Sponsored by ARA

General Dynamics/Astronautics "touring set" will be off again Oct. 6-8 for an ARA-sponsored group excursion to the Big Bear Lake Area.

This event is being scheduled by popular demand and follows closely an August trek to Catalina Island enjoyed by 102 persons. Both trips are under the sponsorship of ARA's Women's Activities Council.

Plans call for chartered buses to depart Astro parking lots at 5:15 p.m. Friday, Oct. 6, returning at approximately 8 p.m. Oct. 8.

Destination will be Big Bear Lake's Wawona Lodge where the tour will spend two nights. Over the weekend participants will be free to follow their own pursuits. Available will be ice skating, swimming, hiking, water skiing, boat rides and dancing at the lodge. One bus will be retained at the lodge to provide transportation in the area.

Total cost per person will be $22. This includes transportation, lodging and all meals except lunch Saturday. A box lunch will be available for the northbound bus ride.

Reservations, which close Sept. 29, are now being accepted on a first-come, first-served basis at all employee services outlets.

Call ARA, ext. 1111, for details.

Wives Scheduling Luncheon Meeting; Address on Cancer

GD/Astro Wives' Auxiliary has scheduled two events in coming weeks, including a luncheon meeting at Kings Inn Sept. 20 and a special presentation on cancer Sept. 27.

The luncheon meeting will begin with a social hour at 11:30 a.m., followed by luncheon at 12:30 p.m. Guest speaker is Frank Burkhouse of GD/Astro's security section.

Reservations may be made by calling Dixie Husted, HI-3-2217, or Winn Callard, BR-7-1033.

The Sept. 27 event is slated for GD/Astro's executive dining room at 7:30 p.m., and will include a lecture and motion picture. There is no admission fee but reservations must be made with Mrs. Genevieve Taggart, AC-3-9928.

ARA Calendar

(GD/Astronautics Recreation Association has some 40 activities in operation for employees. For information, call ARA headquarters, ext. 1111.)

★ ★ ★

ARCHAEOLOGY — Meeting 7:30 p.m., Sept. 27, in ARA Clubhouse. Ruth Simpson, Southwest Museum archaeologist, is guest speaker.

DISCOUNT TICKETS — Some tickets for Ringling Bros., Barnum and Bailey Circus at Westgate Park, 8 p.m. tomorrow (Sept. 14) remain. Cost is $1 per seat. Also, Circle Arts Theater's "Pajama Game," Sept. 17. Both sold at employee services outlets, 11 a.m.-1 p.m., and 4:30 p.m.-5:30 p.m. daily.

FLAG FOOTBALL — Entry deadline Friday (Sept. 15) for plant league teams. Call J. T. McPherson, ext. 2819.

MOTORCYCLE CLUB—Meeting 7:30 p.m., Sept. 20, in ARA Clubhouse.

SPORTS CARS — Photorama Rally Sept. 17. Three-hour 75-mile run starts at GD/Astro plant, 1 p.m.

WESTERN JAMBOREE — Tickets at employee services outlets for Sept. 16 barbecue-dance under stars in ARA Recreation Area.

WIVES AUXILIARY—Luncheon at Kings Inn, Sept. 20. Reservations with Dixie Husted, HI-3-2217, or Winn Callard, BR-7-1033. Cancer film, lecture in executive dining room Sept. 27, 7:30 p.m. Call Mrs. Genevieve Taggart, AC-3-9928, for reservations.

RUSS OLIVER WINS CENTER FIRE MATCH

Russ Oliver won a recent center fire short national match held by ARA Pistol Club with a score of 279. He was followed by Ralph Sanderlin with 275, Ronnie Legg with 264, and Roland Schneider with 261.

Firing the .22 police course in master class competition, Sanderlin edged Glen Myers on a 290 tie by scoring nine Xs to Myers' four. (An "X" is a one-inch circle in the center of the bull's-eye.)

Expert class was led by J. S. Knutson with 280, followed by A. B. Carlson's 278. Bob Geopfarth edged Mort Williams 260-259 in sharpshooter class. Among the marksmen, George Slater scored 250 and Jim Fortner 205.

ARA Pistol Club conducts regular shoots at the San Diego Police Pistol Range.

Beginning Lessons In Bridge Offered

Beginning bridge lessons are being made available to GD/Astro employees through affiliation of ARA Astro Bridge Club with the Barcelona Bridge Club.

They open Friday (Sept. 15) and will be held from 7:30 to 10 p.m. each Friday over a 10-week period. Classes will be taught at the Barcelona Bridge Club, 4th and Juniper Sts.

Those desiring to take part may register by calling Art Saastad, commissioner, at ext. 1919.

Ice Skating Activities Will Resume Sept. 21

Weekly ice skating activities for General Dynamics employees at Convair and Astronautics will resume at Iceland, 6055 Lake Murray Blvd., La Mesa, Sept. 21.

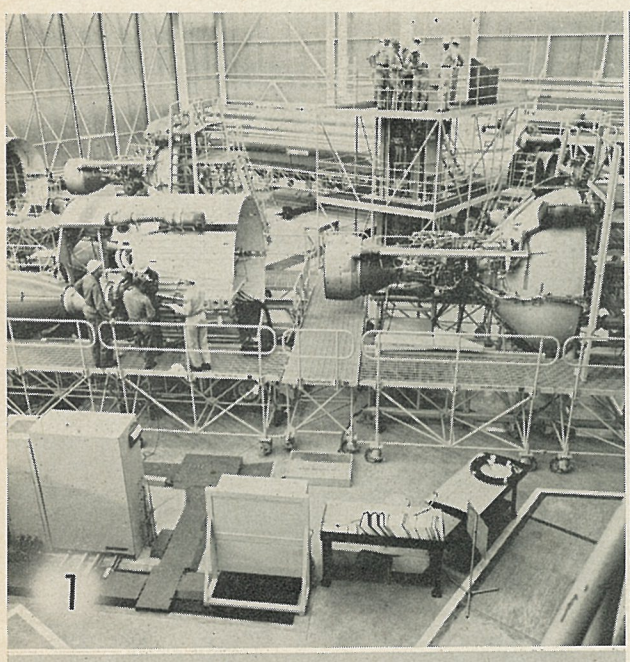
Skating sessions from 6:30 to 8 p.m. each Thursday are sponsored jointly by ARA and CRA with special admission rates of 75 cents for adults, 50 cents for youngsters under 16 years old, and 25 cents for spectators. Skate rental is 35 cents.

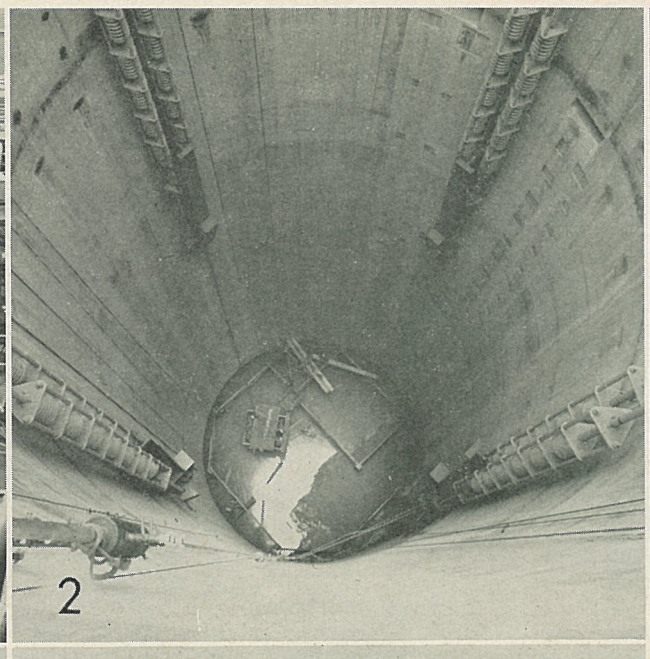
At 8 p.m. the rink is opened for public skating, but General Dynamics skaters may remain on the ice until closing at 10 p.m. with no additional charge.

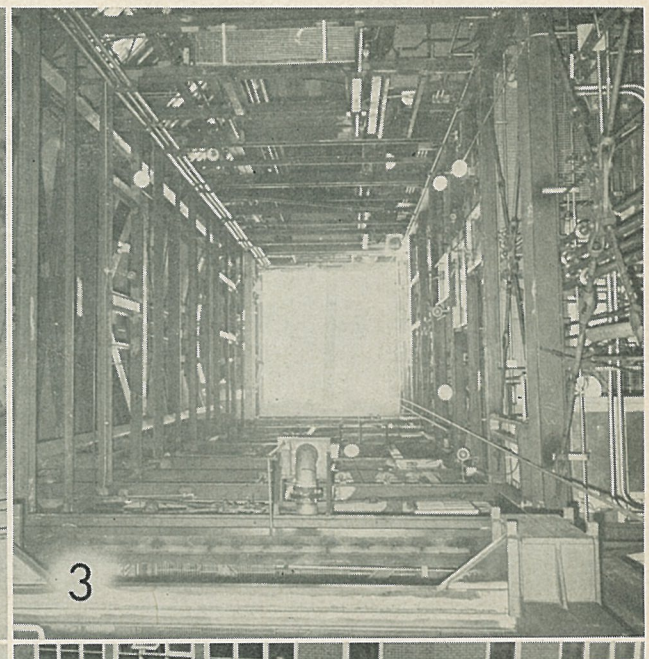
Each week free classes will be conducted by qualified professional instructors for advanced, intermediate and beginners.

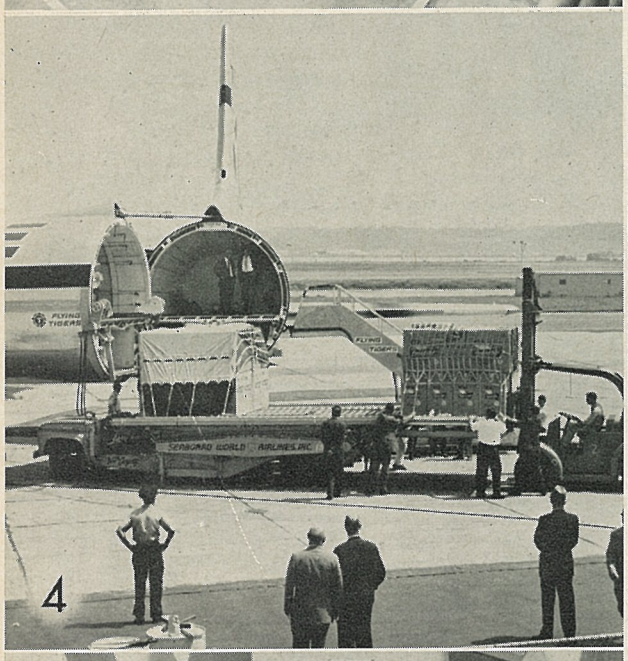
A GD/Convair or GD/Astro identification card will be satisfactory for admission at the Sept. 21 session. At that time, participants will be asked to complete applications for new ARA/CRA Ice Skating Club membership cards which will be required at future sessions. There is no charge for membership.

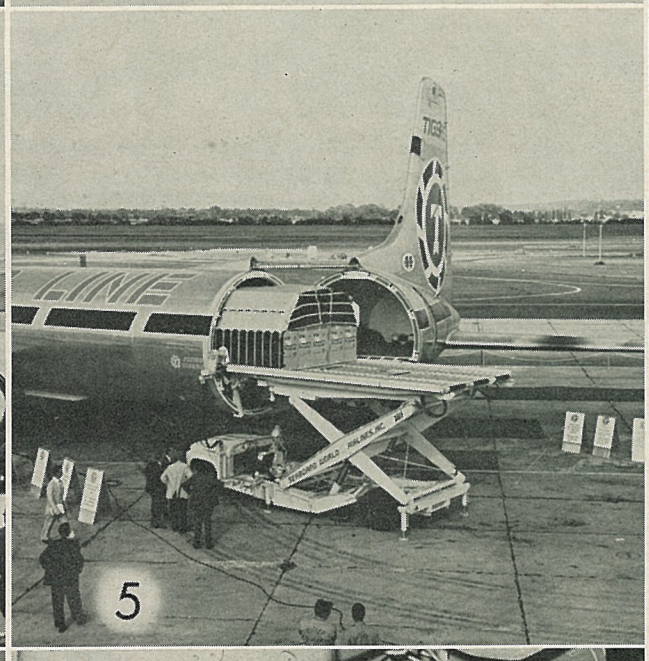
Additional information on the club is available from Martha Woodberry, CRA commissioner, GD/Convair ext. 1245; or Bud Davies, ARA commissioner, GD/Astro ext. 3441.


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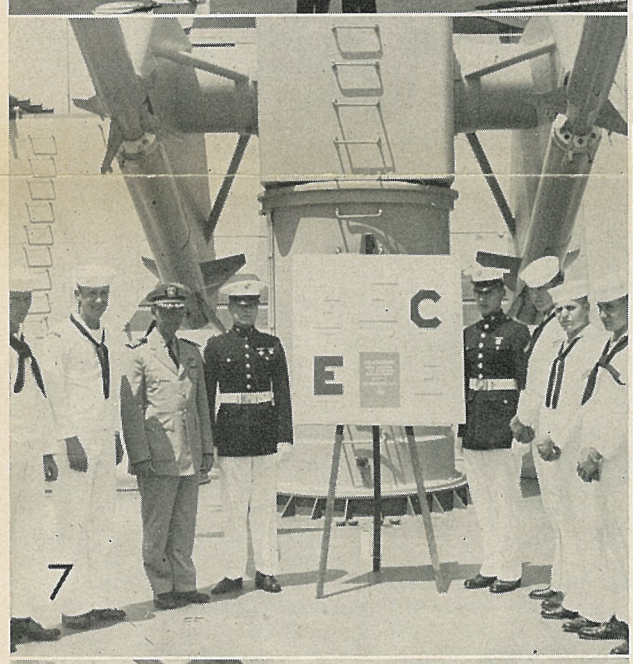

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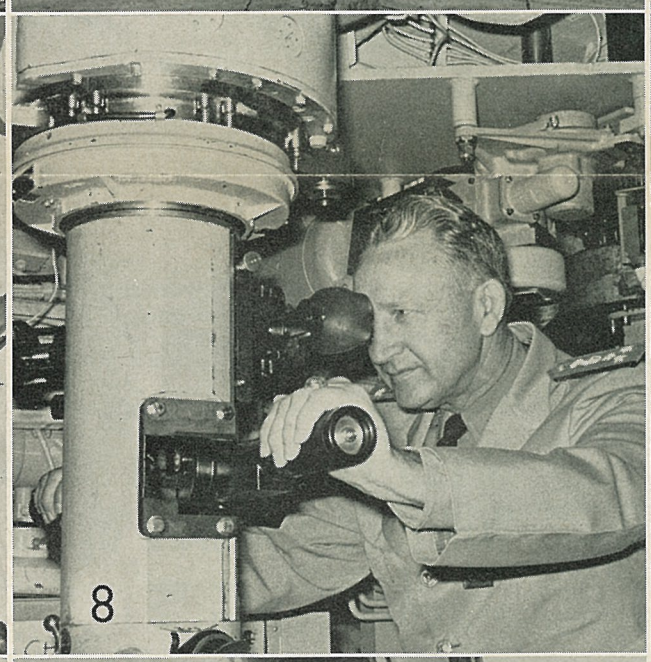

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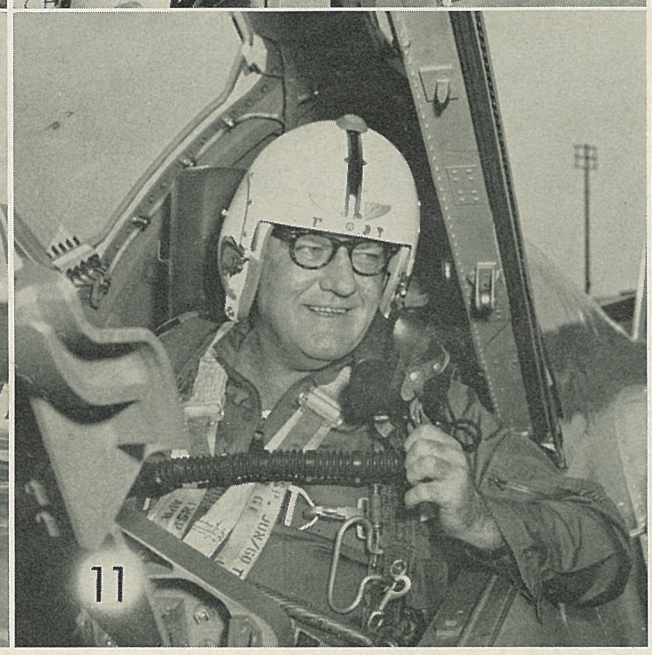

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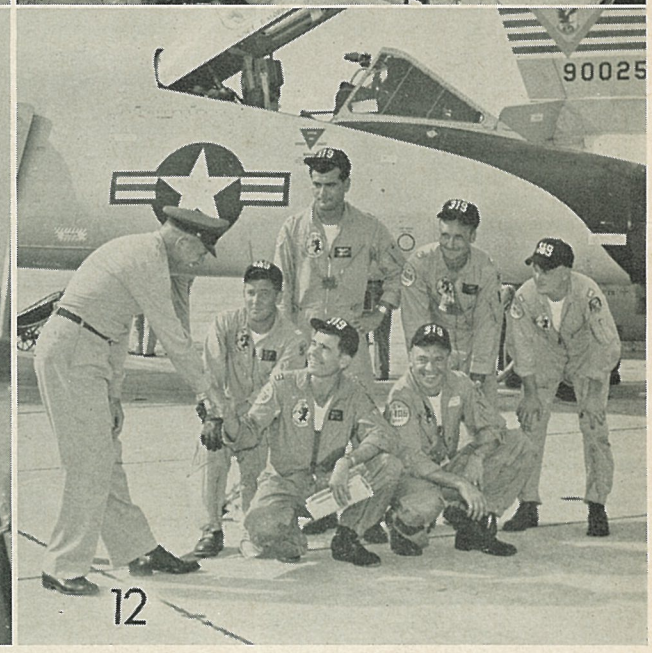

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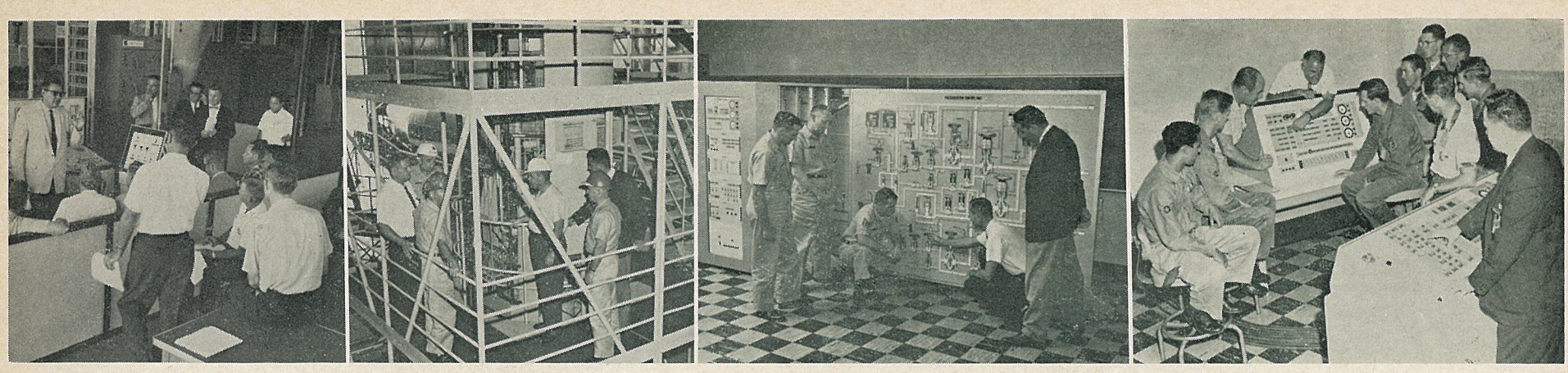

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NEWS REEL — Photos from far afield highlight General Dynamics products. (1) Few students have more impressive classroom than those training for Atlas missile squadrons at Sheppard AFB, Tex. Air Force personnel are in actual study session, using GD/Astronautics-built trainers. (2) From Lincoln AFB comes this view of Atlas silo construction, looking down, showing massive shock springs which guard "insides" against earth movement. In (3), looking from bottom up, steel cradle is in place, ready for installation and checkout of Atlas missile. (4) Canadair Limited's spectacular "Forty Four" cargo plane, featuring swing-tail loading, prepares to absorb two pallets of freight (8,000 lbs. each) and in (5) task is almost completed. (6) Photo of Canadair CF-104. "Forty Four" is capable of carrying two 104 fuselages, with engines, plus wings and tails, etc. (7) Terrier missiles (built by GD/Pomona) shared in honors when USS Providence earned awards of "Es" in missilery, gunnery, engineering and battle efficiency, and "C" for communication excellence. Crew members pose with Capt. Russell Kefauver under Terrier launcher. (8) Vice Adm. Claude V. Ricketts, new Vice Chief of Naval Operations, mans periscope of Polaris submarine Ethan Allen during tour of General Dynamics shipyard at Groton, Conn. (9) Here he is at controls with Capt. Paul L. Lacy and Vice Adm. Elton W. Grenfell, Commander, Submarine Force, Atlantic Fleet. (10) Lt. Col. Frank R. Jones, 59th FIS commander, Goose Bay, Labrador, congratulates 1st Lt. Gerald S. Miller after 1,000 flying hours in GD/Convair-built F-102. At right is GD/Convair field service rep, J. A. Myrann. (11) Allen I. McCone, Special Assistant for Installations to Secretary of Air Force, says "wonderful ride" after Mach 2 hop in GD/Convair-built F-106B at McGuire AFB, N. J. (12) Maj. Keith Cookus, left, praises F-106 pilots of 319th FIS, Bunker Hill AFB, Peru, Ind., for high marks in weapons deployment at Tyndall AFB, Fla. Pilots, from left: Capts. C. C. Gaylord, W. C. Gatschet, F. E. Hanson; (in rear) G. T. Beckman, J. W. Rodgers, 1st Lt. T. F. Pope. Lt. Col. W. O. Beane commands 319th; Ray Schaper is GD/Convair rep. Eleven F-102 and F-106 squadrons will vie in William Tell Weapons Meet at Tyndall next month.



FINAL ROUND—In relatively short time (since 1959) GD/Astronautics has designed, built and installed complicated training devices for D, E and F missilemen. Final selloff at Sheppard AFB took place this month. From left: J. E. Scott, chief of product support, demonstrates T-353 facility air conditioning trainer; scale model of silo installation is inspected by R. M. Kirkpatrick of Astro training, Maj. W. Conant, deputy director missile training, Maj. C. Shrader, Atlas branch training, J. F. Self, AF instructor, Capt. J. Kissinger, and Scott; selloff of T-367, showing Maj. William Forsythe, Atlas training branch chief, Lt. Col. A. B. Scheaffer, missile training director, T/Sgt. R. M. Frazier, C. Petty of Astro engineering; Astro instructors Bert Kenney and Steve Delbridge explain devices to AF technicians.

GD

ASTRONAUTICS EDITION
(OFF-SITE)

GENERAL DYNAMICS NEWS

Vol. 14, No. 20 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | Wednesday, September 27, 1961



WELCOME—J. R. Dempsey, GD/Astro president, greets Capt. J. R. Tackett, Lt. Col. N. E. Hartwell, Capt. C. R. Harmatys and Maj. D. W. Cunningham, recent arrivals for Air Force Executive Development with Industry training program.

Atlas Trainer Program For AF Reaches Climax

Before the end of the year General Dynamics/Astronautics will be putting the finishing touches to a $30-million project, a little-known but highly important part of the overall Atlas program.

The project centers around design, fabrication and installation of training devices utilized in teaching both individual and team skills to men who will man operational Atlas bases.

Installation has been at three locations. Two (Sheppard AFB and Chanute AFB) teach individual skills. Vandenberg AFB is a crew or team training base where individual skills are welded together.

As a result of this project Astronautics has earned distinction as a designer and fabricator of training devices. In fact, Astronautics has turned out more units for Atlas training, both in number and dollar value, than have ever been built for a single weapon system. More than 30 major trainers, some consisting of multiple sections and components, have been built. The first was turned over to the Air Force in October, 1959. The last under the present concept is scheduled for installation at Vandenberg AFB by mid-December.

Time has been a key factor with

(Continued on Page 2)

Executives Appointed In Advanced Planning

Five executive appointments within advanced product planning (Dept. 105) have been announced by J. R. Dempsey, General Dynamics/Astronautics president.

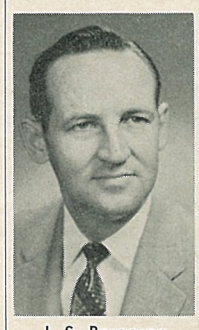
The five are initial appointees in the new organization with additional appointments pending. All report to W. H. Patterson, vice president-advanced product planning.

Named directors of advanced product planning were J. J. Crowley and Bruce McKay. J. W. Petre and J. S. Berggren have been appointed managers of advanced products. T. W. Wills is now assistant to the vice president-advanced product planning.

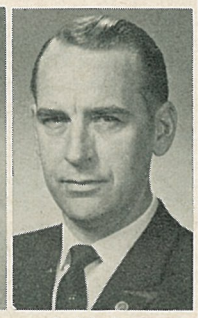
T. W. Wills

Crowley is joining Astronautics after serving as vice president and assistant general manager at the Grand Central Rocket Co. From 1957 until 1959 he served as executive assistant to the vice president-engineering of General Dynamics Corporation.

McKay is also a newcomer, moving to Astronautics from the Bell Aerosystems Co. where he was assistant vice president and director of marketing. A graduate of the University of Washington and former student at UCLA and the California Institute of Technology, McKay has been with Bell since 1960. Prior



J. S. Berggren



J. W. Petre

to that time he worked at Piasecki Helicopter Co., Marquardt Aircraft and Northrop Aircraft in various executive positions.

Petre, a graduate of Brooklyn Polytechnic Inst., has been with Astronautics since 1960. His most recent assignment was base activation manager for "F" series bases. Before that time he was projects manager for Airborne Instruments Laboratory, Melville, N. Y. For 18 years Petre was with Fairchild Engine and Aircraft Corp.

Berggren is a graduate of the University of Minnesota and holds a master's degree from the University of Michigan. He worked for Curtiss Airplane Division prior to 10 years in the Air

(Continued on Page 2)

Astro Research Projects, Future Tasks Outlined

Top General Dynamics/Astronautics executives formed a panel to answer questions about the division and its operation at a meeting of GD/Astronautics Management Club this month.

J. R. Dempsey, president; Mortimer Rosenbaum, executive vice president; W. W. Withee, vice president-research and engineering; E. D. Bryant, vice president-operations; and W. H. Patterson, vice president-advanced product planning, replied to questions submitted by club members.

Frank J. Traversi, director of material, whose department sponsored the program, served as moderator. Some of the questions asked, with replies, are as follows:

QUESTION—Why doesn't General Dynamics have an arrangement for employees to purchase stock by payroll deduction?

ANSWER—Dempsey: We do not want to have any "prejudiced" purchases; employees buying stock because they work here. Stock is readily available through competent brokers. What an individual does with his savings is his business.

Q—How long will GD/Astro's off-site operations continue and what will happen to base employees when these operations are complete? **A**—Rosenbaum: At present, it appears the Atlas activation program will be completed next year. However, we are trying to obtain other ICBM base activation jobs. When activation is completed we intend to bring personnel into the San Diego operation to the maximum degree possible.

Q—Will GD/Astro ever completely take over Plant 2? **A**—Dempsey: If work demands, yes. Although we occupy much of the plant now, it is administered by GD/Convair. Actually, it doesn't really matter who's in charge of Plant 2.

Q—What research projects are now under way at GD/Astro? **A**—Withee: Today's research is the foundation of tomorrow's business. We spend $6 to 6½-million for research annually. A few of our present study areas include space medicine, the MARS space station mockup, microfilm techniques for electronic circuitry, the vacuum test chamber, and micrometeoritics. We are foremost in the nation in studies of metals at cryogenic temperatures. In terms of future business, these programs may be applied to Saturn and Apollo; after that, to MARS or similar projects.

Q—What is the outlook for acceptance of GD/Astro as a recognized electronic manufacturer? **A**—Bryant: We are already rec-

(Continued on Page 2)

Frank Kemper Factory Mgr.—Electronics

Appointment of Frank B. Kemper as factory manager-electronic manufacturing has been announced at General Dynamics/Astronautics by E. D. Bryant, vice president-operations.



Frank Kemper

At the same time, J. P. Hopman, now factory manager, was designated factory manager-assembly and fabrication.

In announcing the changes, Bryant indicated the new assignments were in recognition of the growth of Astronautics manufacturing operations.

Kemper has served as superintendent of the electronic manufacturing department at Astronautics since 1960. Prior to that time he was superintendent of primary and final assembly and electronic operations. He has been a superintendent since the Astronautics organization was created, serving before that as a GD/Convair superintendent (1952-56) and general foreman in electronics and radio (1947-52).



HEAD TABLE—These were principals at recent "Blue Badge Turkey Talk" for GD/Astro Management Club. Astro President J. R. Dempsey is at far right.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Sept. 11.

Dept. 120, Communication: To editorial supervisor, T. A. Chapman. To graphic reproduction asst. supervisor, R. W. Gualco.

Dept. 170-2, Office Services: To supervisor, R. J. Waller. To asst. supervisor, J. G. Godfrey.

Dept. 181-0, Project Planning and Methods: To factory methods asst. supervisor, W. F. Van Dusen Jr.

Dept. 182-0, Facilities Control: To facilities requirements asst. supervisor, F. N. Holmes.

Dept. 193-3, Industrial Accounting: To timekeeping asst. supervisor, G. W. Megeath.

Dept. 220, Manufacturing Control: To foreman, W. C. Ruzich. To asst. foreman, E. D'Ercole, J. D. Syson. To asst. supervisor, V. L. Akers.

Dept. 250-1, Plant Engineering: To project control asst. supervisor, F. B. McIntyre.

Dept. 321-0, Personnel Systems Engineering: To systems supervisor, R. E. Dixon.

Dept. 322-5, Support Publications: To support publications asst. supervisor, R. V. Lacey, L. D. Minor.

Dept. 331-1, Support Supply: To GFE asst. supervisor, G. R. Bigadza.

Dept. 333-2, Off-site Logistics: To support logistics asst. supervisor, J. M. Rowland.

Dept. 335-3, Service Parts: To support logistics asst. supervisor, R. T. McNoun.

Dept. 350-3, Support Field Operations: To asst. supervisor, C. L. Bennett.

Dept. 351, Field Modification: To maintenance and facilities general supervisor, C. H. Towner. To inspection supervisor, H. E. Cason. To field modification group engineer, F. A. Sweger. To subcontractor coordinator, L. E. Rowe. To manufacturing control asst. supervisor, J. A. Sweeney. To asst. foreman, I. E. Alcon, D. T. Barrett, R. L. Buckman, C. A. Hicks, M. C. Laing, S. W. Sims, P. T. Vann, R. W. Whited.

Dept. 531-3, Systems Design: To design group engineer, F. H. Bloschies, J. B. Ona, W. S. Williamson. To asst. design group engineer, M. S. Fader.

Dept. 539-2, Design Liaison: To asst. design group engineer, H. B. Farrar.

Dept. 561, Test Laboratories: To standards lab group engineer, H. C. Keith, J. E. Vondracek.

Dept. 562-1, Test Laboratories: To test lab group engineer, G. B. Wood Jr.

Dept. 564-5, Test Laboratories: To test lab group engineer, G. F. Sheets.

Dept. 565-3, Test Laboratories: To test lab group engineer, F. Wallace Jr.

Dept. 782-0, Electronics Manufacturing: To asst. foreman, F. Berry.

Dept. 812, Outside Production—AGE: To buying supervisor, V. J. Tarantino. To purchasing agent, E. J. Bryant, J. C. Dingman.

AFMTC

Dept. 571, GD/Astronautics Operations: To chief of quality control-base, R. H. Nicholson. To foreman, R. D. Beasley. To asst. foreman, G. W. Leonard.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To activation engineering asst. supervisor-base, G. C. Bestor, J. C. Sims. To asst. foreman-transportation, J. L. Manry. To asst. foreman, M. L. Bash, F. W. Cropper, T. G. Saint Sing Jr.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To industrial engineering asst. supervisor-base, I. P. Bagrow. To production control asst. foreman-base, R. F. Barone. To inspection asst. supervisor, W. T. Black. To asst. foreman, W. J. Butts, A. G. Johnson.

EDWARDS RS

Dept. 575, GD/Astronautics Operations: To asst. foreman, W. O. James.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To asst. foreman, A. J. Baskin, B. G. Lewis.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To chief of quality control-base, J. C. Major. To chief of material-base, O. Tucker. To asst. test conductor, R. F. Holder. To asst. foreman, L. L. Holland.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To production control foreman, A. Pellegrin. To engineering asst. supervisor-base, R. E. Pahan.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To receiving and stores foreman, H. G. Thatcher. To material control asst. supervisor, D. D. Bridges. To receiving and stores asst. foreman, J. E. Boardman.

Births

MAIN PLANT

DOLLAR—Son, Johnny Edward, 9 lbs., 7 oz., born Sept. 2 to Mr. and Mrs. E. W. Dollar, Dept. 771.

HOLMSTEAD—Son, Gary Lynn, 8 lbs., born June 23 to Mr. and Mrs. G. M. Holmstead, Dept. 595-1.

OERMANN—Son, Kevin Carl, 8 lbs., 4 oz., born Aug. 25 to Mr. and Mrs. W. A. Oermann, Dept. 535-5.

FORBES AFB

HARAWAY—Son, Alva Theodore, born Sept. 10 to Mr. and Mrs. A. E. Haraway, Dept. 614-9.

SCHILLING AFB

ZENON—Son, Raymond Augustus Jr., 6 lbs., 9 oz., born Sept. 4 to Mr. and Mrs. R. A. Zenon, Dept. 615-8.

DYESS AFB

SPROLES—Son, Scott Wesley, 6 lbs., 15½ oz., born Sept. 17 to Mr. and Mrs. Sam G. Sproles, Dept. 618-0.

Service Emblems

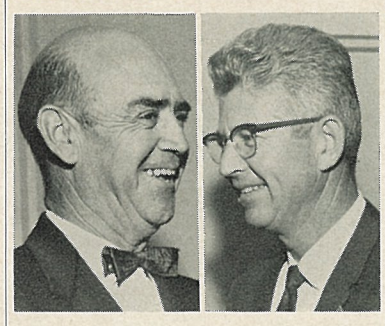
MAIN PLANT

Service emblems due during the period Sept. 16 through Sept. 30:

Twenty-five-year: Dept. 181-0, Michael Brooks; Dept. 400-0, L. G. Granstedt.

Twenty-year: Dept. 290-2, J. R. Leadaman; Dept. 401-5, F. F. Hammond; Dept. 402-1, I. K. Raney; Dept. 460-0, T. G. Graves; Dept. 831-1, A. B. Mercer.

Fifteen-year: Dept. 152-0, A. B. Breslauer; Dept. 220-1, E. G. Bradshaw; Dept. 280-2, Mary J. Zelno; Dept. 402-1, G. R. Vollmer Jr.; Dept. 604-0, Loucene H. Morris; Dept. 759-0, Peter Molis; Dept. 842-1, J. C. Leisure.



PIN AWARDS—P. F. Grijalva, Dept. 831-1, left, and J. M. Jones, Dept. 840-0, recently received 25-year service awards from Mort Rosenbaum, executive vice president of GD/Astro.

Ten-year: Dept. 170-2, Alice A. Wicks; Dept. 191-0, C. E. Chapman; Dept. 220-6, J. W. Hare; Dept. 250, R. F. Garcia, E. O. Stein Jr.; Dept. 331-1, H. P. Miller; Dept. 335-3, H. A. Lambert, Marian L. Smith.

Dept. 343-2, W. R. Smith; Dept. 344-2, J. C. Scott; Dept. 402-1, J. S. Friedman; Dept. 535-5, W. R. Buevens; Dept. 549-5, Lois S. DeSota, Dept. 551-1, D. C. Prim; Dept. 581-1, J. B. Grafa; Dept. 591-5, W. F. Riggle; Dept. 594-0, R. C. Armstrong; Dept. 599, D. E. LaMotte, Dorothy M. Wicks; Dept. 600-0, Mary R. Gengler; Dept. 759-0, Harry Fontenot; Dept. 820-0, Dorothy C. Baber.

FAIRCHILD AFB

Twenty-year: Dept. 616-3, L. E. Ford.

Ten-year: Dept. 613, E. J. Bryant, J. H. Galvin, V. W. Kenner.

FORBES AFB

Ten-year: Dept. 614-7, R. L. Cantarini.

SCHILLING AFB

Twenty-year: Dept. 615-4, A. N. Meziere.

VANDENBERG AFB

Twenty-year: Dept. 576-3, W. J. DeConcini.

Ten-year: Dept. 576-3, J. R. Beasley, J. C. Byrne.

WALKER AFB

Fifteen-year: Dept. 619-4, C. J. Dunphy.

Deaths

MAIN PLANT

MacHALE—James Ashley, Dept. 220-6 (999). Died Sept. 10. Survived by wife, Alberta.

Executives Appointed In Advanced Planning

(Continued from Page 1)

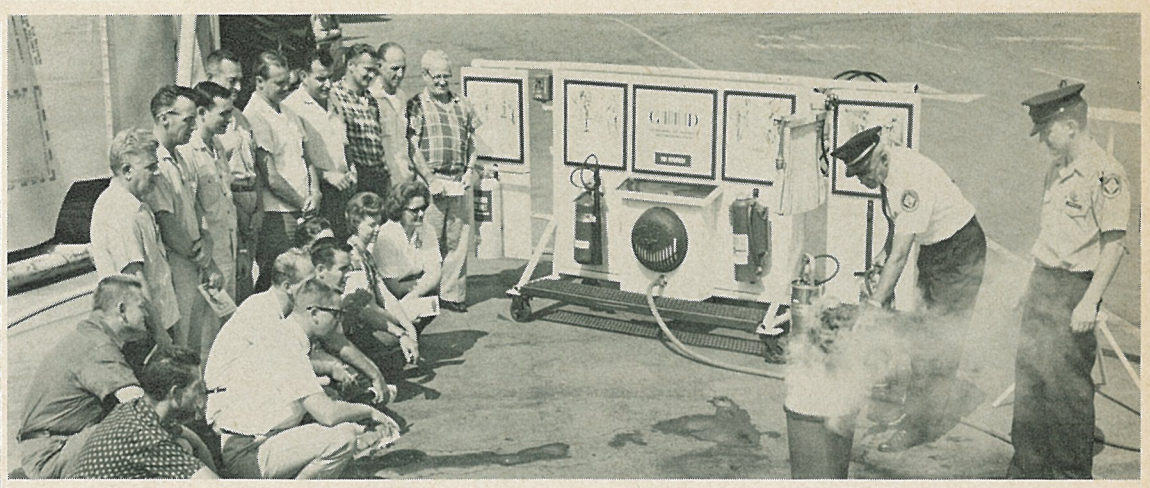
Force, with extensive service as a research and development officer. He joined Astronautics in 1956 as a program administrator in long range planning.

Wills attended Harvard, Stanford and Duke Universities. He has been with General Dynamics and its predecessors for 21 years. He worked in various executive posts at Convair in industrial relations and came to Astronautics as employment manager and assistant to the manager of industrial relations when the division was formed. He has served most recently as chief of personnel administration.

Astro Man Is First Student at College

First student to register at newly opened Grossmont College was T. I. Jaramillo, General Dynamics/Astronautics assistant foreman, Dept. 756-0.

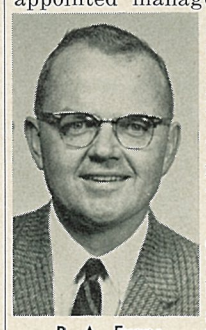
Grossmont is a new junior college serving the area east of San Diego. Last year, Jaramillo attended San Diego City College, and plans to continue studies at San Diego State College after completing Grossmont courses.



FIRE'S OUT—Lt. H. C. Neel and Fireman L. G. Worley are snapped during demonstration utilizing new unit for indoctrinating employees in emergency fire fighting equipment use. Unit contains one of every type emergency apparatus available for fighting fires at GD/Astro.

Evans Named Personnel Mgr.

R. A. "Ross" Evans has been appointed manager of personnel administration at General Dynamics/Astronautics, M. V. Wisdom, director of industrial relations, announced.



R. A. Evans

Evans succeeds T. W. Wills who has become assistant to W. H. Patterson, vice president-advanced product planning.

J. A. Croft has assumed Evan's former post as chief of educational services.

Evans is responsible for educational services, employment, employee services, safety and Plant 2 industrial relations.

Evans holds a bachelor degree in chemistry (San Diego State) and a master of arts degree in chemistry (UCLA). Before joining Astro in 1959 he was a civilian educational adviser to the commanding officer of the Service School Command, U. S. Navy Training Center. Prior to 10 year's educational work with the Navy, Evans taught college science courses and worked as an engineer in the aircraft industry.

Croft has been with General Dynamics since 1955 when he joined Convair as a special courses instructor. He later became an assistant supervisor in training and came to Astro in that capacity in 1957. He is a graduate of Los Angeles City College. Previous work included service with Lockheed—Vega and RCA Service Company, Inc., where he was a field representative.

AF OFFICERS REPORT FOR YEAR AT ASTRO

Four Air Force officers participating in this year's Air Force Executive Development with Industry program recently reported to General Dynamics/Astronautics.

Lt. Col. Norris E. Hartwell Jr. and Maj. Donald W. Cunningham will be trained in project management, with emphasis on management structure, engineering approaches, production methods.

Capt. Casimir R. Harmatys and Capt. James R. Tackett have begun a junior executive program featuring structures, data processing, ground-space communication, recovery systems, propulsion, auxiliary power, and administration.

During their nine-month stay, the officers will gain a working knowledge of the astronautics and space vehicle fields, and become familiar with GD/Astro's activities and capabilities in these areas.

Dr. Leadon to Teach Graduate Course

Dr. B. M. Leadon, senior staff scientist of General Dynamics, will teach a fall graduate course at San Diego State.

The course, "Heat and Mass Transfer" will be offered by the Department of Mechanical Engineering.

Demonstrations Show How To Avoid Serious Blazes

General Dynamics/Astronautics has introduced a "new model" portable demonstration unit to be utilized in indoctrinating employees in emergency fire fighting.

Astro's fire department designed the unit and plant engineering handled fabrication which included remodeling original equipment which has been used in 392 demonstrations witnessed by 7,714 employees since May, 1958.

The new unit includes every piece of emergency fire fighting equipment currently available to employees. There is a hose reel, hose rack, fire alarm box, five types of extinguishers and a simulated sprinkler system complete with alarm bell.

Ten demonstrations monthly are conducted for employees at the main plant, materials building, Plant 2, Fordham Bldg. and Point Loma Test Site.

"Every employee is a potential emergency fire fighter," said Fire Chief A. C. Anderson. "Quick action and a knowledge of equipment has enabled employees to extinguish fires that could have been serious."

Although demonstrations are normally confined to factory and engineering departments, they can be scheduled for any group. Call the fire department, ext. 1811, for details.

Program For AF Reaches Climax

(Continued from Page 1)

Astronautics repeatedly meeting or beating schedules.

Typical is the current work on "F" series trainers. Actual design work began on most in March, with one starting as late as May. To date, finished installations are well ahead of schedule. At Sheppard AFB, where a majority of trainer installations has been made, some trainers are actually in use by students within 10 hours after "selloff."

Product support department is responsible. A trainer design section, under Mel Hart, supervisor, handles design work and administers the entire program. Each trainer has a principal engineer. Manager W. W. Pierce's support center provides fabrication crews. Activation tasks are handled by support field operations. Throughout the effort, valuable support has been provided by such functions as engineering, contracts, purchasing and others.

Multiple Air Force organizations are concerned. Air Training Command is the "customer," acquiring devices as specified for filling Strategic Air Command requirements.

Although care is taken that Atlas students are not assigned to tasks for which they have not been trained, the program does involve "surprises," W. E. Magnuson, customer training general supervisor, explained. Consoles are arranged so that instructors can introduce simulated malfunctions which students must identify and correct.

Experience gained in the Atlas program has opened the door on potential business. Similar training devices could be turned out for any weapon or space system. In fact, at the Air Force's request, each proposal being offered by Astro includes provisions for training devices and personnel courses.

"We have gathered a highly-skilled group of technicians who have adequately demonstrated efficiency in doing a good job on time," said E. A. Reynolds, director of product support. "We will use this group in moving still further into this important business prospect."

Astro Future Tasks Outlined

(Continued from Page 1)

ognized as such. Our efforts here are directed toward systems, manufacture, and procedures for vehicles and space systems. Our electronic function is designed to support these programs, and to excel in this support.

Q—Is there an interchange of administrative ideas and techniques among General Dynamics divisions? **A**—Dempsey: Certainly. In terms of personnel, R. H. Biron, General Dynamics senior vice president-industrial relations, and his staff have this responsibility. Committees also exist for the interchange of information in specific areas. And of course, the Board of Management is constantly exchanging information.

Q—To what extent does GD/Astro contribute to the San Diego community economy? **A**—Traversi: I have the figures on that. We presently run a payroll of $2 million a week. In support of the Atlas program, 660 county firms are involved, and incidentally, 500 of these are small businesses.

Q—What are our present building plans? **A**—Bryant: We are presently working on Bldg. 33A, which will be completed in November. No other immediate plans are "in the works" but of course, additional space will be added as our needs dictate.

Q—What new programs or study contracts were received during the past year? **A**—Patterson: In 1960 we were asked to bid on 321 items; we bid on 49 and received 14. In 1961 to date, we have received 214 requests, bid on 23 and received 11.

Q—What is the future of Centaur? **A**—Rosenbaum: This is one of the principal NASA boosters, and will be used for the Army ADVENT communication satellite series. We feel it will be very successful, and that, as with Atlas, there will be more orders to come. The future is bright, but we must remember that Centaur is now at the same stage as Atlas was before 4-A.

★ ★ ★

In a concluding statement, Dempsey urged employees to utilize normal channels to obtain answers to questions concerning the company.

"If an employee has questions, he should refer them to his supervisor," he said. "We'll pass them as far 'up the line' as necessary to get an answer."

General Dynamics NEWS

Successor to "Convairiety" (which for 13 years served plants of the former Convair Division of General Dynamics Corporation), West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

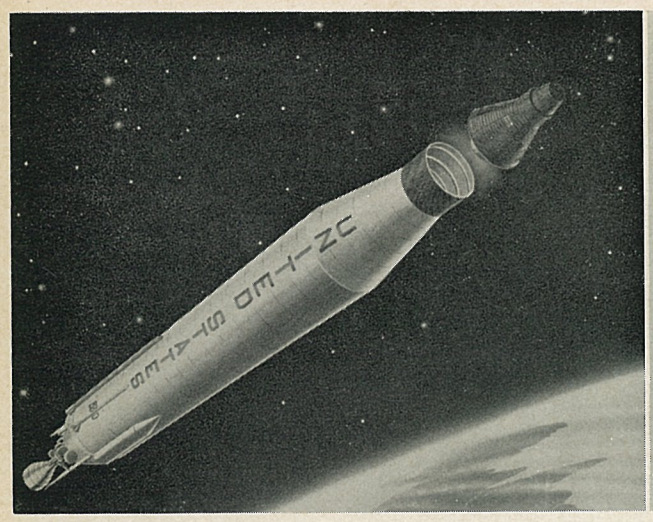
Approximate current total circulation, over 70,000.

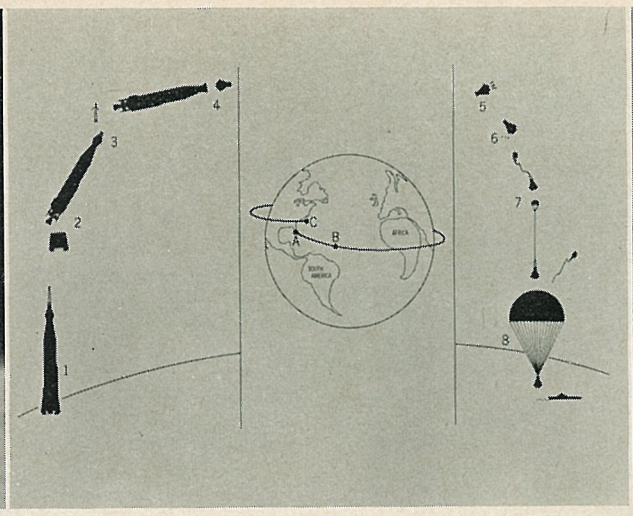
Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRowning 7-8900, ext. 3322. Staff: Bryan Weickersheimmer, news editor; Willard Harwood.

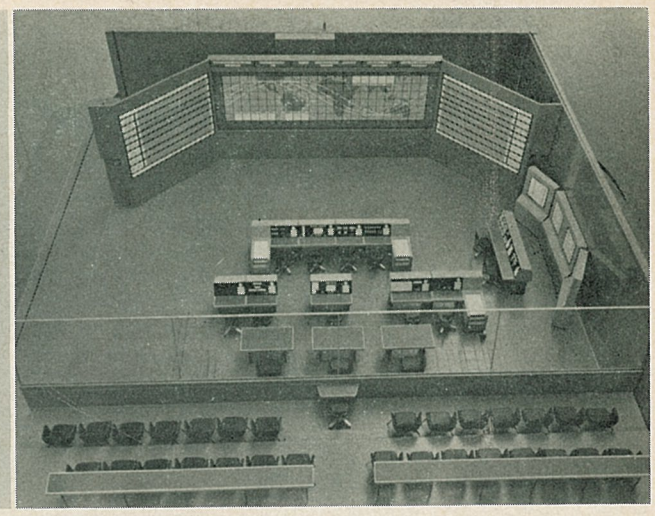
Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.







ATLAS-LAUNCHED—In center above is flight path of successful Mercury shot Sept. 13 during which Atlas missile put capsule in orbit nearly 100 miles above earth. At left is artist's sketch at point of separation. At right is model of Project Mercury Operations Control Center at Cape Canaveral, designed and built by GD/Electronics for operation. General Dynamics President Earl Johnson congratulated Astronautics on "this all important one."

GD/Astro Population Tops 30,000 Mark

General Dynamics/Astronautics employment this month (Sept. 12) climbed above the 30,000 - person mark for the first time.

Total employment is up 5,890 over the first work day of 1961, reflecting an average weekly increase of more than 163 persons.

Off-site bases, including Sycamore Canyon, added 2,097 employees for a weekly average increase of 58 persons. Vandenberg AFB currently tops all with an employment of 1,520. Schilling AFB is now the largest operational base with 1,263 persons employed.

Approximately a third of Astro's total population is off-site.

GD/Convair Commended by AF As Palmdale Facility Closes

Seven years of operations at Palmdale, Calif., ended early this month for General Dynamics/Convair when facilities were turned over to North American Aviation.

Built specifically for the F-102 and F-106 programs, the Palmdale facility tested and delivered to the Air Force more than 1,000 airplanes. Peak employment was 2,600, reached in September, 1957. The last F-106 was turned over to the AF this summer.

Lt. Col. Charles W. Atterholt, chief of the USAF San Diego Air Procurement District, informed J. H. Famme, vice president and general manager for GD/Convair, that transfer of the facility "culminated a clearance and vacating operation which I consider most exemplary. Convair's performance was commendable both in timeliness of vacating the site and the quality of plant records transferred." Atterholt mentioned that North American officials had been particularly complimentary of F. J. Parker (who was in charge of the close down), commenting upon his cooperation and thoroughness.

North American is using the former Convair facility for B-70 work.

During GD/Convair operations in the Palmdale area, pilots logged more than 21,000 hours in more than 19,000 flights.

At the close down, Famme extended his appreciation to all personnel involved and specifically mentioned Parker and W. J. Martin (now in charge of quality control and production flight at San Diego), former base manager. Parker is now with GD/Astronautics as chief of stores and traffic.



TURNOVER—F. J. Parker turns over keys to Palmdale, Calif., facility to Jerry Barton of North American as GD/Convair's tasks in Antelope Valley phased out. From left: Lt. Col. Charles W. Atterholt, Maj. B. A. Hurlbut, Barton, Wallace Fore of North American, W. J. Martin of GD/Convair, Parker.

Atlas Shot Praised By Earl Johnson

J. R. Dempsey, General Dynamics/Astronautics president, received the following wire from Earl D. Johnson, president of General Dynamics Corporation, following the successful Mercury capsule orbit Sept. 13:

"Congratulations to you and your people for doing so splendidly on this all important one."

Earl D. Johnson.



ON THE PAD—Atlas 88-D is shown on pad at Cape Canaveral prior to shot that put Mercury capsule in orbit. "Cherry picker" is being used for last minute capsule check.

'Pilot Ready Room' Placed in Operation To Serve San Diego Air Travelers

Completed and put into use this month was a new "Pilots' Ready Room" at San Diego to serve government and military personnel visiting General Dynamics divisions there.

The 25x40-ft. concrete block building is located at the north end of Lindbergh Field, adjacent to Plant 1 salvage yard. Access is from Lindbergh Field side only.

The new building replaces the former pilots' lounge on second floor of Bldg. 4, Plant 1. Now all government planes coming to San Diego are directed to taxi to stops in front of the new lounge, relieving congestion on the field.

The ready room, erected under supervision of GD/Convair plant engineering, contains one large room for lounge, conference room, office. In the other half are showers, locker room, and rest rooms.

It is open 24 hours a day every day in the week. During day hours on weekdays the office is manned by W. W. Lynt of GD/Convair communication department. He assists government and military personnel arriving for business at General Dynamics plants in the San Diego area. Transportation and hotel accommodations are arranged, if needed; airplane service, fuel and oil provided, and minor repairs, if possible.

The lounge is not restricted to General Dynamics visitors. Building and services are open to personnel of all government planes landing at Lindbergh Field, if they wish to use it.

Arrivals and departures of military planes are charted on the operations board in Lynt's office. He is alerted to arrivals by Federal Aviation Agency officials.

Much of the traffic at the site is due to daily airlifts of the Air Force Space Systems Division which connect San Diego with Vandenberg, Norton, Edwards Air Force Bases and AFMTC in Florida.

ASA International Airlines flights #480 and #481 connecting San Diego with Los Angeles and Vandenberg AFB, departing at 7:15 a.m. and 3:15 p.m. daily, will continue to use the main Lindbergh Field terminal. General Dynamics people using the service are to check in at Swift Air Service office at the airport, as before.



BETWEEN FLIGHTS—Air Force officers from Colorado Springs relax at San Diego in new Pilots' Ready Room before departure. At counter, Cols. T. W. Bothwell and K. R. Kelsoe check with W. W. Lynt, in charge of lounge, and R. M. MacIver, General Dynamics manager of Colorado Springs office.

Atlas Reaffirmed As No. 1 Launcher

Successful orbit of a Mercury spacecraft Sept. 13 was the fifth successful scientific space launch attributed to an Atlas launch vehicle so far this year.

One other scientific space launch was considered partially successful, while a single shot has been declared unsuccessful for the year.

Atlas 88-D blasted off from Cape Canaveral's Complex 14 at 7:04 a.m. (PDT) after a countdown conducted by General Dynamics/Astronautics crews headed by T. J. O'Malley, test conductor. Participating were representatives of the National Aeronautics and Space Administration (NASA), sponsor of the Mercury program.

Some three hours and 10 minutes later, after an earth-circling flight of one hour, 46 minutes, a U. S. Navy destroyer fished the Mercury capsule from the Atlantic some 161 miles east of Bermuda. Meanwhile, Atlas 88-D, minus the booster section, continued to spin in an earth orbit with an apogee of some 158 miles and a perigee of approximately 100 miles. How long the missile tank would remain in space was unknown, although the period was estimated as a brief one.

Many messages of congratulations flashed back and forth following the flight. J. R. Dempsey, GD/Astronautics president, said in a message to employees:

"This flight again reaffirms that our Atlas is the nation's number one space launch vehicle. Our records now stand at an enviable 12 successes out of 16 scientific space launches. Our overall Atlas record is an impressive 63 successes out of 96 launches with 21 partial successful and only 12 unsuccessful. With your fine work, I am confident our record will continue to grow."

Of the 16 scientific space launches mentioned by Dempsey, seven have come thus far in 1961, including the Mercury shoot.

Starting the 1961 "parade" was a Jan. 31 launch of a Samos II spacecraft by Atlas 70-D from Vandenberg AFB's Point Arguello Complex which resulted in a near circular orbit (polar) of approximately 300 miles high.

A sub-orbit Mercury spacecraft launch followed Feb. 21. Atlas 67-D was launched from Complex 14 at Cape Canaveral. The spacecraft was recovered less than an hour later some 1,425 miles down range.

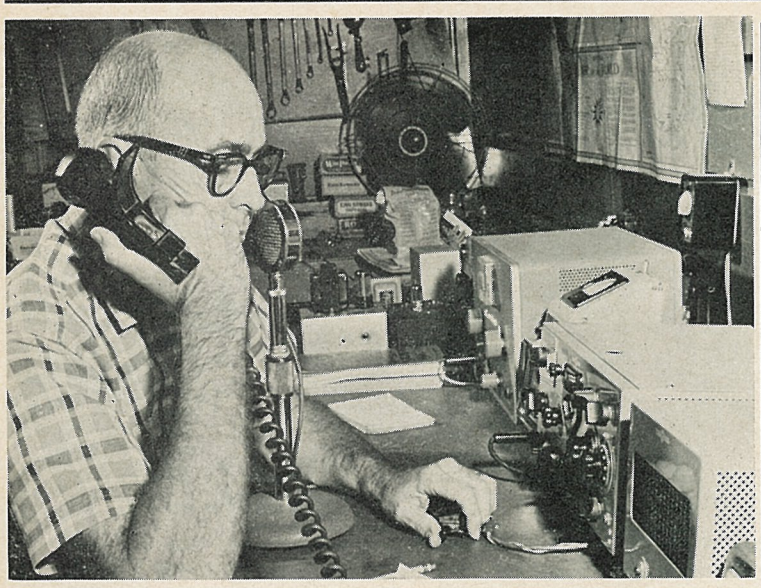
Considered partially successful was a March 25 launch of Atlas 100-D, carrying a Mercury spacecraft, from Cape Canaveral. However, an abort system to eject the spacecraft from the missile in emergencies, worked perfectly after the range safety officer destroyed the missile. As a result the Mercury spacecraft was recovered.

On July 12 Atlas 97-D with an Agena stage and a Midas III spacecraft was launched successfully from Point Arguello. It went into circular orbit 1,850 miles high as the heaviest upper stage yet boosted into high-altitude orbit.

Atlas 111-D, launched at Cape Canaveral, performed perfectly, but a Ranger I spacecraft failed to obtain orbit on Aug. 23.

The only unsuccessful attempt so far this year occurred on Sept. 9 at Point Arguello when an attempted launch of Atlas 106-D with a scientific payload failed.

Already a "workhorse" in the early space age, Atlas has been tabbed for more than 100 major launchings during the 1960s by NASA.



HURRICANE HELP—T. N. Lawrence, a GD/FW Dept. 75 electronics supervisor, personally handled more than 200 emergency messages over his short-wave radio during Hurricane Carla.

200 Messages

GD Ham's Radio Set Links FW With Hurricane-Hit Area

Hurricane Carla's only evidence in Fort Worth at the time was a gentle sprinkle of rain.

But on the Texas-Louisiana coast, Carla was a clawing, screaming, deadly harridan.

Fort Worth's atmosphere was calm. But thousands, including many General Dynamics employees, were worried about friends and relatives feeling Carla's fury. Phone and telegraph communication with the hurricane area was virtually impossible.

T. N. Lawrence, a GD/FW Dept. 75 flight line supervisor, was sleepy, but working hard.

In his "shack" behind his River Oaks home, he had been talking alternately into his radio mike and telephone, with only three hours' sleep in the past 24. Coworkers at the plant were calling every few minutes, hoping he could get some word of friends or relatives in the disaster area. Mrs. Mary Ritchey, Dept. 63 clerk, was one.

She and her husband, E. Ritchey, a Dept. 94 supervisor, were worried about the safety of his mother, Mrs. Kyle Huebner, in Beeville. Lawrence was able to reach another ham in nearby Victoria, who volunteered to help.

Lawrence stayed at his radio post 30 hours in two days, with only brief intervals of sleep. He relayed more than 200 messages, many of them for GD/FW friends.

A licensed operator since 1935, Lawrence has performed the same service in numerous disasters, including Fort Worth's 1949 flood.



LIKE HOTCAKES—Dee Ernst of GD/Astro employee services shows "Dynamic America" to Mr. and Mrs. J. B. Julian, both Dept. 576, as employees wait to purchase. Initial supplies at most points sold out quickly but reorders are on the way.

Electronic Manufacturing Forum Goes Through 'Dry Run' at GD/Pomona

A dress rehearsal of a forum to be presented Oct. 10 at the National Aeronautic and Space engineering and manufacturing meeting of the Society of Automotive Engineers was conducted Sept. 11 at General Dynamics/Pomona.

The forum, entitled "Electronic Manufacturing—Aerospace," will be conducted by J. Ferderber, manager of Hughes Aircraft Company's El Segundo Division, chairman; H. E. Jordan, GD/Pomona design group engineer, co-chairman; and H. F. Sawyer, GD/Pomona design specialist, secretary.

Panel members will be S. A. Francis, vice president and technical director of Sippican Corp., R. L. Johnson of General Motors, R. L. Landry of Motorola, Inc., and E. C. Sengletary of Texas Instruments. All except Francis and Sengletary were present for the rehearsal.

Jordan and Sawyer are among 18 General Dynamics men who will participate in various phases of the meeting.

New Phone Number Assigned Bldg. 19

General Dynamics Corporation offices in Bldg. 19 at San Diego now have a new outside telephone number—CY-6-6666.

Starting this week, the CY-6-6611 number has been assigned to General Dynamics/Convair only. All calls are handled through the plant switchboard in Bldg. 8, as well as those coming in for General Dynamics/Electronics. That division's outside numer is CY-8-4641.

In-plant calls can be dialed in the usual manner with company extension numbers.

GD/ASTRO'S ALBERT ON WATER BOARD

Sidney L. Albert, General Dynamics/Astronautics Dept. 567-6, was recently named to the San Diego Water Reclamation Commission by Mayor Charles Dail.

The newly organized 14-member commission will compile information and formulate policy related to reclamation of water from sewage, and advise the city manager and city council.

Albert has stated he will welcome ideas and suggestions concerning water reclamation from other employees. He served last year as president of the San Diego Industrial Development Council.

Toy Collection Starts Today in Annual Drive

Inspection and segregation of Fix-a-Toy donations starts today, and repair work by General Dynamics / Fort Worth volunteers will begin Oct. 9 at the Sheep Barn behind Will Rogers Memorial Coliseum.

"We'll use essentially the same area for repairing toys that we used last year," said Jim Kincannon, Fix-a-Toy general chairman.

Toy inspection and segregation will be under surveillance of Earl Weiher and R. C. Smith, co-chairmen.

Jimmy Harwell heads up repair activities, while C. C. Allen is serving as general coordinator.

Meanwhile, Kincannon urged employees to donate "repairable toys" of several types — dolls, stuffed and squeak toys, and others—which might be refurbished and passed on to some needy child this Christmas. Collection boxes have been placed at all entrance gates.

"If the toy won't fit in the box, call me at ext. 4325 and I'll make arrangements to have it picked up," Kincannon said.

Keep Guard Up! Colonel Warns

"If the American people allow their guard to slip, the communists will not hesitate to attack," stated Col. Frank E. Marek, Carswell Air Force Base Commander at the September meeting of the Society of Technical Writers and Publishers at Carswell AFB Officers' Club.

"The mission of the Strategic Air Command is to deter war, and, if necessary, to counter a communist threat by a strategic force powerful enough to insure military victory under any circumstance," commented the base commander in a speech given on "Mission of Strategic Air Command."

He stated that SAC is a global aerospace force and to concentrate on any one force would endanger the lives of all Americans. The Air Force plans to use manned bombers and missiles to counteract any communist threat, he added.

Ancy New Chairman Of Speaker Bureau

Jim D. Ancy, technical training specialist in educational services, is new chairman and coordinator of the General Dynamics/Fort Worth Management Club Speakers Bureau.

Ancy will announce special topics of seasonal interest and develop a speaking project with local Civil Defense authorities. Persons interested in securing speakers may contact Ancy at ext. 3446 or CI-4-0935.



MANY FACETS—Charm has many faces as demonstrated here by Judy Frydenlund, Dept. 130-5, and these many aspects will be covered in ARA's self-improvement courses for women opening Oct. 3 at GD/Astronautics in San Diego.



YOUNG CHAMPION—Bruce Robinson in highland costume, displays some of trophies won for skill at Scottish dancing. He's added dozen more since photo was taken last year.

Trophies Galore

Highland Dancer, 13, Sensation During 'Invasion' of Canada

It's been a great year for "clan Robinson" as Bruce, 13, son of Averill (GD/Astro Dept. 143-3) and Charles Robinson (GD/Convair Dept. 42) earned international recognition with his highland dancing.

Young Bruce, who has won a roomful of trophies for his colorful Scottish dances during the past several years, captured the MacGregor Trophy at the Vancouver (B. C.) Highland Games last month—the first time in its history the trophy has left Canada.

At the same event he won first in sword dance and third in highland fling.

A week later, Bruce whirled through the games at Victoria with a first, second and third in sword dance, reel and "sean trubhais" respectively. At San Francisco's Highland Games on Labor Day he captured five "firsts," a "third" for a "foreign" Irish jig, a gold medal, two trophies (one for California Championship), and a host of "bests."

Earlier in the year, the tartan-costumed youth collected other trophies at the Del Mar Fair, and at San Diego Highland Games.

Complicated routines of the authentic dances frequently have their origin in some event of Scottish history, and like most such folklore, have been intricately prescribed by tradition.

"The 'sean trubhais' for example, celebrates the release of the Scots from French domination, during which time they were forbidden to wear their traditional kilts," explained Mrs. Robinson.

"Bruce enjoys dancing," she added wistfully. "But at this point, we sometimes wonder where we'll put them if he wins more trophies."

Trades Desks

Young Scientist, Born in Congo, Joins GD/FW Research Group

A young Belgian scientist recently traded desks—thousands of miles apart.

Only a few weeks ago, Dr. Jacques Emile Romain was teaching mathematics in the Congo, where he was born and reared. Today, he's a staff scientist at General Dynamics/Fort Worth.

Dr. Romain, 35, is a member of the advanced design-applied research group at GD/FW, headed by Dr. E. L. Secrest. Although he has traveled widely in other parts of the world, it's his first time in the United States.

"I really didn't know what to expect," he confides. "But I like it very much." He's especially impressed by the friendliness shown him and his brunette wife, Ninette.

Dr. Romain was born in Elisabethville, Belgian Congo, where his father was a teacher in a government-sponsored school. Young Jacques was sent to Belgium for two years' pre-university training, and later, from 1945 to 1948, he attended the University of Brussels. He received his master's degree in mathematical physics in 1948.

Within a few months, the Romains were en route to the Congo, where Dr. Romain took a professor's post at a government school in Usumbara. Meanwhile, he completed work toward his doctorate, awarded by the University of Brussels in 1952.

When the Belgian government established a university for natives in Elisabethville in 1956, he joined the staff there, remaining until July this year.

Sensing the future of the Congo might be "uncertain" with the advent of independence granted on June 30, 1960, Dr. Romain sent his wife home to Brussels the month before.

He feels lucky that he, too, escaped involvement in the rioting and upheaval that followed independence. He narrowly escaped it, however. En route to Brussels in July, his plane landed in Leopoldville for refueling. "They got the passengers back on the plane rather hurriedly," he recalls. "I didn't know until later that half an hour after our takeoff, the airfield was invaded."

Dr. Romain speaks excellent English, which he studied "a little" in school, but learned mostly during a four-month stay in South Africa.

The young physicist also speaks French, and can read German, Dutch, and "scientific" Italian.

Brothers Pool Their Spare Time As Racing Hobby Pays For Itself

An all-brother team, who have spent all their spare time for years working on their racing cars, are making their hobby pay for itself.

Their current entry, a strange-looking vehicle built around a 1923 Model T Ford roadster body, won the most main events in San Diego Modified Sportsmen racing last year and is leading the field this season.

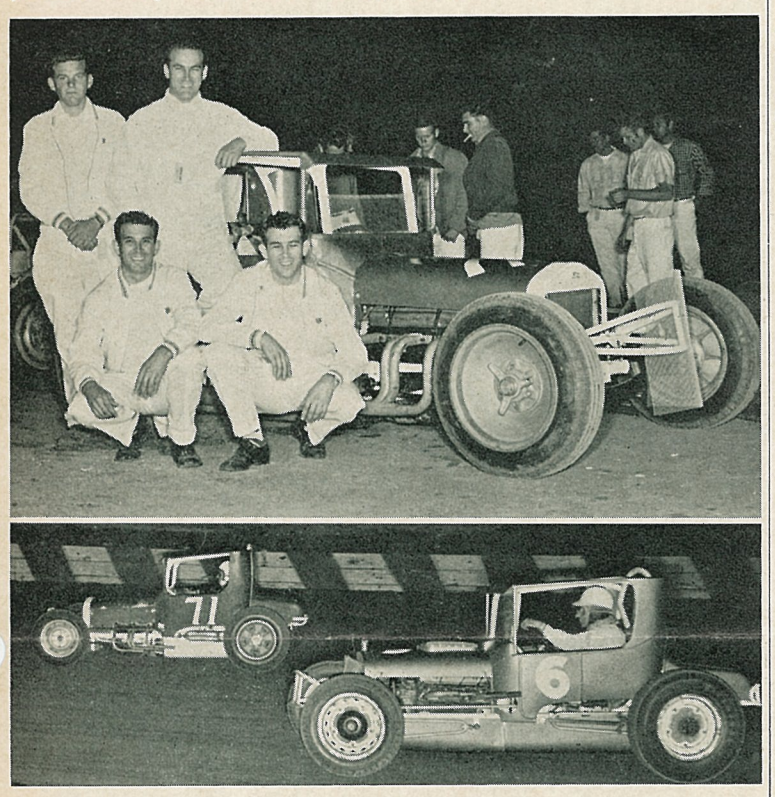
David and Donald Peat, twins, and their older brother, Wallace, were first racing devotees to use the Model T body, first for jalopy racing and, since 1958, for modified sportsmen events. (David is in General Dynamics/Convair Dept. 192; his twin, Donald in GD/Astro's Dept. 220. Wallace is employed at Ryan Aeronautical Co.)

Their pitman, Pat Richardson, makes it almost an all-General Dynamics crew. He's in Dept. 250 at GD/Convair Plant 2.

They've hand-built four cars since they started in 1952. Their present entry took about four months to put together in 1959 and has cost in the neighborhood of $5,000. "Though, with its top racing record, it's been in the money enough to pay for itself!" said Dave.

It broke the speed record on the quarter-mile track at Cajon Speedway this summer, circling the oval in 17.13 seconds, with their driver, Don Edmunds of Los Angeles, at the wheel. Edmunds was named "Rookie of the Year" at Indianapolis four years ago.

The custom-made chassis is of chrome tubing, the engine, a 1960 Chevrolet. The T shell was salvaged from a wrecking company; aluminum hood, fire wall, and gas tank, from scrapyards. Biggest expense was the magnesium racing wheels with Indianapolis spot brakes and Firestone racing tires. Complying with Modified Sportsmen racing regulations its top is braced with steel roll bars and it is equipped with safety belts and shoulder straps for the driver.



WHAT IS IT?—In lower shot, strange vehicle at left (No. 71) is hand-built modified sportsman racer of Peat brothers sparked by 1960 engine under 1923 Model T hood. Above, are (kneeling) twins, Dave and Don Peat; (standing) Pat Richardson and Wallace Peat.

General Dynamics Men to Speak At Coming Management Institute

Four General Dynamics men will be on the roster of speakers listed for the coming Middle Management Institute in San Diego.

D. C. Wilkens Jr., General Dynamics/Convair manager of industrial relations; R. H. Nall, GD/Convair educational services supervisor; R. A. Ezekiel, GD/Astronautics management development specialist, and Donald D. White, administrator of PACE program at GD/Astronautics, will take part in the Institute.

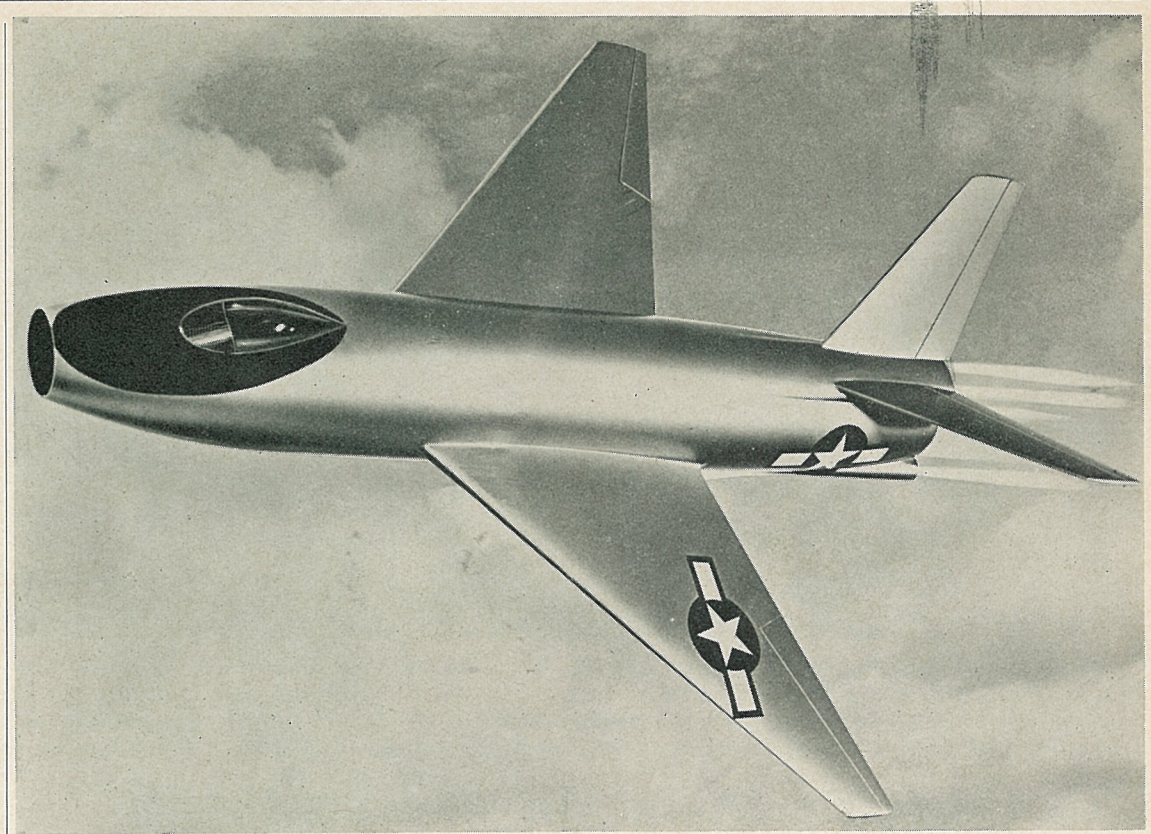
Selected management personnel from General Dynamics divisions in the San Diego area will be registered in the advanced training lecture series.

Sessions will be Fridays and Saturdays on five alternate weekends, beginning Oct. 20 and ending Dec. 16, at Mission Valley Inn.

The Institute is sponsored yearly by UCLA's Institute of Industrial Relations and Graduate School of Business Administration, University of California Extension in cooperation with San Diego Chapter of American Society of Training Directors.



CLUB LEADERS—Representatives of four General Dynamics division Management Clubs met in San Diego recently. From left: G. D. Lombard of GD/Pomona; Dick Craig of Corporate Office; John Watson of GD/Fort Worth; R. W. Dill of GD/Convair; W. E. Magnuson of GD/Astro; T. R. Worthy of GD/Pomona; E. G. Henderson of GD/Fort Worth; and J. V. Kappler of NMA.



GREAT GRANDPAW—A forerunner of F-102 was swept-wing, V-tail, rocket-and-ramjet-powered XP-92 which won 1946 interceptor competition, but was never built. Disappointment with wing's characteristics led to experimentation with delta platform.

Disappointment

Wind Tunnel Tests Ruled Out XP-92, Though it Won Contest

(Installment No. 68 in a continuing history of General Dynamics products deals with early engineering development of designs which ultimately resulted in famous delta wing, used for F-102, F-106 and B-58.)

The original XP-92 configuration used a wing swept back at 35 degrees. Two so-called "desk models" were built and shipped from Vultee Field to Wright Field when entries in the design competition were judged in May, 1946. Afterward, one was mounted in Vultee Field's four-foot wind tunnel to obtain rough data.

Results were immediately disappointing. "Tuft tests indicate that a tip stall starts at a five-degree angle of attack," an early report showed. Lateral control difficulties were found, too. Engineers suspected an entirely new platform would be needed to meet performance requirements. On July 5 this historic notation appeared in the reports: "A 60-degree delta wing will be investigated this week."

The triangular-wing concept was not new. Pre-war studies by NACA had showed the theoretical high-speed advantages of various wing shapes having extremely low aspect ratios. Power plants for such did not exist. During the war a brilliant German designer, Dr. Alexander Lippisch (father of the Me-163 rocket interceptor) experimented with the delta platform. He built an unsuccessful delta glider (brought later to the U. S. and tested by the Air Force) and conceived the Jager P-13A. This design combined the triangular wing with ramjet power for a theoretical top speed of 1,500 mph. The plane was not built but the designs fell into Russian hands. (If used they showed what other post-war research has demonstrated, that the Lippisch wing was much too thick to have supersonic capabilities.)

At Downey, Calif., Adolph Burstein, chief of design, was first to advocate giving the delta wing a try. Fillets shaped to fill internal angles behind the swept-wings created a delta of sorts. Tunnel performance was recorded July 12 as "the best to date." Learning that Lippisch was at Wright-Patterson AFB, Ralph H. Schick, chief of aerodynamics, arranged a conference at Dayton late in July. He returned convinced that the Convair design group was on the right track. Intensive investigation followed on alternate platforms, with leading edge sweepbacks ranging from 45 to 70 degrees.

One of the outstanding advantages of the triangular wing appeared to be relatively low drag in the transonic region. Airfoils showed a sharp drag rise starting about Mach .9 and reaching a peak just above Mach 1, then tapering off as the "drag hump" was left behind. Vultee Field studies prepared for the Air Force in November indicated a peak drag coefficient of only .048 for a 60-degree delta, compared with .072 for a 45-degree swept wing of equal area.

These and later studies also proved the delta to be exceptionally stable in thin air, and to have good low-speed handling qualities, due in part to the absence of a distinct stall point. Additionally, it was realized that the triangular shape was inherently strong, permitting the structure to be at once thin and rigid; and that the delta's area (larger than that of a comparable straight or swept wing) implied greater internal volume for fuel.

Rosenbaum Keynoter Of Training Society Western Conference

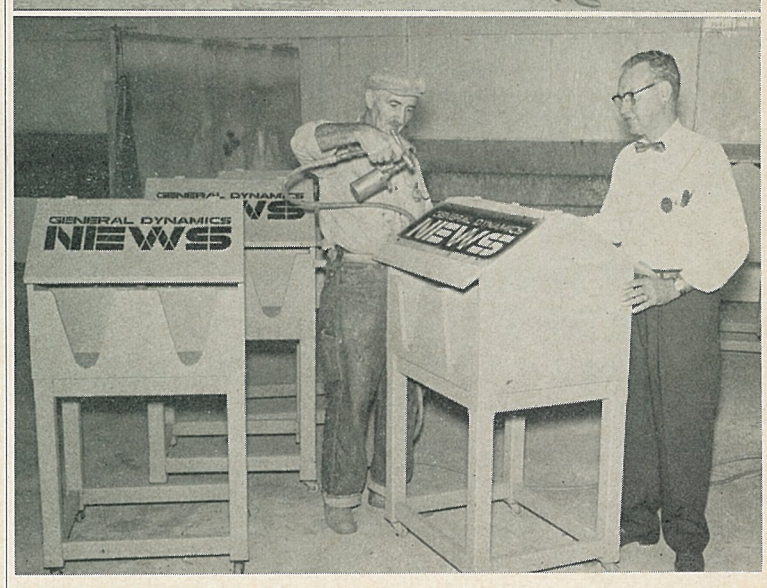
General Dynamics educational services staffs in the San Diego area will take part in the coming Tenth Western Regional Conference of American Society of Training Directors, Oct. 4-6.

Program chairman of the conference which opens next Wednesday at the Catamaran Hotel on Mission Bay is R. H. Nall, General Dynamics/Convair educational services supervisor. Host group is the society's San Diego chapter.

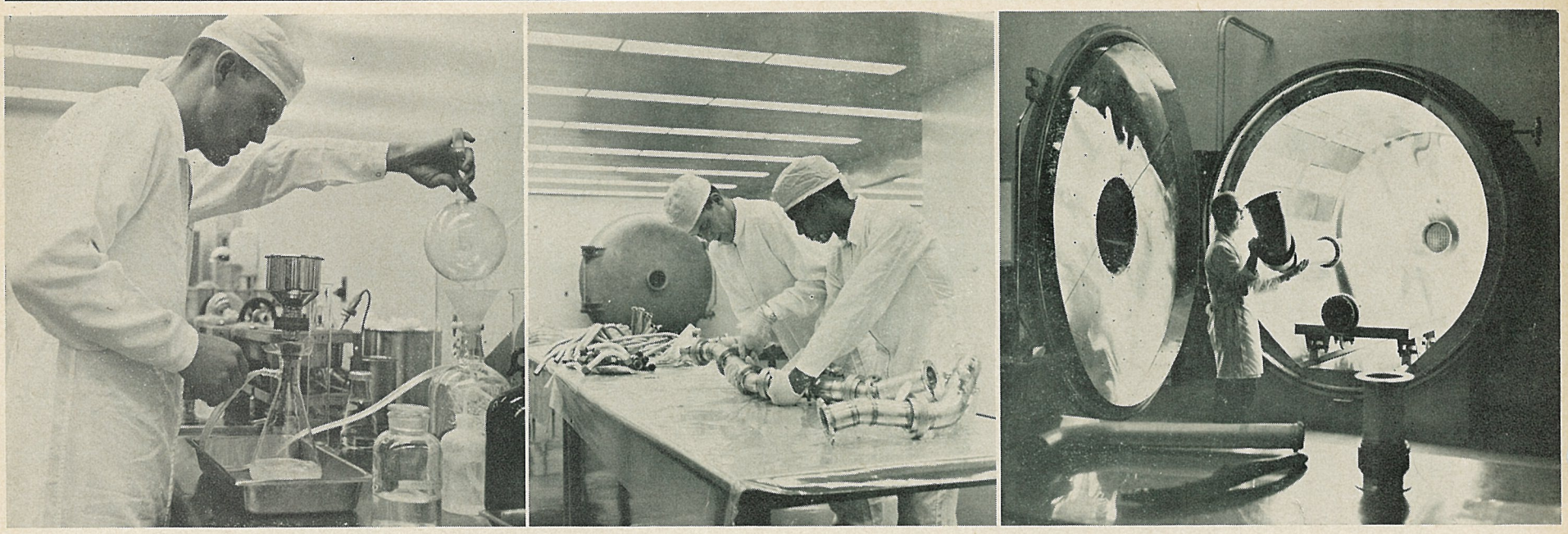
Keynote speaker at the opening morning session will be Mort Rosenbaum, executive vice president of General Dynamics/Astronautics. J. L. Budros, General Dynamics director of personnel administration, will be luncheon speaker on the same day.

B. P. Schroeder of General Dynamics/Pomona educational services will be a panel member at one of the conference sessions.





CHANGING TIMES—Sept. 13 saw first issue on street under new name "General Dynamics NEWS." At top was scene at Overpass No. 1, San Diego. Below, John Bender, Dept. 25, GD/Convair, changes name on boxes. With him is E. B. McMahon, assistant foreman.



SUTURE! SCALPEL!—In "hospital surgery" setting, GD/Astro personnel take care that Atlas missile parts are cleaner than clean. At left, D. A. Voss, foreground, and Jay Gunsauls maintain constant check on cleaning solutions. In center, John J. Tracy, inspector, and W. I. Lewis check out ducts prior to packaging. At right, R. I. Franczak holds duct signifying entry into vacuum furnace, following degreasing, rinsing and sonic cleaning. Furnace heaters normally are off when door is open, but exception was made to illuminate oven for photo. Duct will pass through oven, out door at opposite end, into precision cleaning room.

'Air Curtains' Maintain Clean Room Efficiency

Another step to insure that parts for the Atlas missile are "cleaner than clean" was taken recently when operations began in General Dynamics/Astronautics' new 8,800-square-foot clean room facility at San Diego.

The facility, some 4,500 square feet of which is under environmental control, is located just inside the high bay area of Bldg. 5.

A unique feature for passing parts in and out of environmentallly controlled areas is the clean room's "air curtains." These consist of a screen of air blown horizontally across wall openings and drawn into intake gratings. The moving air serves to prevent contamination from passing between the two areas, yet permits easy movement of parts.

First stop for parts entering the facility is the pre-cleaning area at its eastern end. Here a one-ton bridge crane transports them during degreasing and rinsing in three large tanks. GD/Astro's large sonic cleaning units are also used in this area.

A vacuum oven dries parts as they move into the environmentally controlled area for precision cleaning, flushing and final sealing.

Cleaning operations are conducted by personnel from GD/Astro's Dept. 733 with M. M. Goodhart, general foreman; Jack Ridley and John Villian. foremen; and Robert Reeves and S. Serrona, assistant foremen, in charge.

Constant checks of cleaning effectiveness, and clean room environment are maintained by personnel of process control (Dept. 141-2) who staff a complete laboratory within the area. In charge of this function are G. H. Schwab, supervisor, and James Butler, process engineer. Also keeping close watch on the operation's effectiveness is an inspection (Dept. 143-6) team headed by Ed Bourgeois, supervisor, and Charles Payne, assistant supervisor.

Employee Services Post Goes to Sears

Keith Sears, 15-year Convair veteran with more than 10 years' experience in employee services operations, has joined General Dynamics/Astronautics to fill a new post as employee services supervisor.

Reporting to J. R. Mitchell, chief of employee services, Sears will assist in administering all employee services activities at Astro.

A native of Salt Lake City, Sears has lived in San Diego for more than 20 years. He attended Balboa Law School (Cal Western).

Sears has long been active in church, welfare and youth activities in San Diego. At GD/Convair, where he has worked for the last 15 years, he was CRA commissioner of astronomy.

Benefit Cards Set For Oct. 20

Astro Wives' Auxiliary will hold its annual benefit card party in GD/Astronautics cafeteria Oct. 20, with all proceeds to support a Christmas party for needy children.

Bridge, canasta and pinochle tables will be set up, with play to begin at 8 p.m. Table and door prizes will be awarded, and refreshments served.

All employees, dependents and guests have been urged to organize in "tables" of four players. Reservations and tickets at $1 each are available at all employee services outlets.

Additional information on this event is available from Mrs. Carl Priest, BR-7-2309, or Mrs. John Horning, BR-7-4104.

Estimating Society Will Meet Oct. 3

The San Diego Industrial Estimating Society headed by GD/Astro's L. H. Boggess will meet Oct. 3 at the Town and Country Hotel. A 5:30 p.m. social hour will precede dinner at 6:30 p.m.

Featured speaker is D. E. Pederson, Rohr Aircraft Co. manufacturing manager, and a booklet, "Cost-Quantity Relationship in the Airframe Industry," will be distributed to members.

Tickets at $2.75 per person will be available at the door. Boggess will give details on ext. 1331.

Fishermen to Make Own Rods and Flies

Two major projects on tap for ARA Fishing Club during the coming season will be discussed at the group's meeting at 7:30 p.m., Oct. 2 in ARA Clubhouse.

First is a series of "do it yourself" nights in the club's workshop in the ARA Clubhouse, when members will make their own fishing rods, flies and sinkers using club equipment.

Simultaneously, Fishing Club will join with Astro Modelers in construction of a combination casting pool and model boat basin in the ARA Area.

Club members have been reminded that marlin tackle is now available for rental through the club.

GD/Astro to Revise Mail Guide Section

A revised General Dynamics/Astronautics Mail Guide section for inclusion in the division telephone directory is being printed and will be distributed in early October.

The new section lists departments in numerical order, with key personnel, telephone numbers and proper mail zones, reflecting up-to-date changes in titles and department numbers.

Sheet Metal Winner Again

A perfect record won General Dynamics/Astronautics August safety and housekeeping contest for sheet metal (Dept. 732). It was sheet metal's second consecutive win.

Tool and die (Dept. 452) and machine shop (Dept. 731) also completed the month with no violations of good housekeeping, material handling, or fire and accident practices.

Safety awards were also earned by electronics research and development (Dept. 782), major assembly (Dept. 758), tool service (Dept. 460), manufacturing control (Dept. 220), engineering test (Dept. 756), production electronics (Dept. 781), mockup and plastics (Dept. 453-454), processing (Dept. 733), stores and traffic (Dept. 833) and test labs (Dept. 560).

Flag Football Leagues Begin

Pre-season play in the newly organized ARA flag football leagues began this week with 18 departmental teams taking part.

Two seven-team leagues for first-shift employees have been organized and include teams representing GD/Astro's Sycamore Canyon facility and GD/Convair.

These leagues will play on city park and recreation facilities on Monday and Thursday evenings, with games scheduled for 6:30 and 8 p.m. both nights.

A four-team second shift league is slated to play on Saturdays.

Practice sessions continue through this week, with regular season play to open Oct. 2.

ARA KEGLERS SET FAST LEAGUE PACE

An all-Astronautics bowling team, representing ARA in the 875 Sunday Traveling League, set some pretty high marks for others to shoot at in opening games Sept. 10.

Rolling against GD/Convair the team turned in a 2,992-pin team series. Ed Frankowski took over individual lead with a 260 game and a 674 series.

Participants and their scores included: Hank Brenner, 185-213-167—565; Bill Geopfarth, 193-182-238—613; George Peck, 212-185-233—630; Bod Bodwell, 147-184-179—510; and Frankowski, 214-194-266—674.

Mort Sahl Tickets On Sale at Astro

Reduced price tickets to Circle Arts Theatre's fall season opener, "An Evening with Mort Sahl," are now on sale at all General Dynamics/Astronautics employee services outlets.

Tickets to the 6 p.m. performance, Saturday, Oct. 7, are available to employees for $3.40, $3 and $2.60, a 20 per cent saving over regular rates.

Value Engineering Experience Pays Off in Lower Atlas Costs

There are no coat hangers on an Atlas missile, but a General Dynamics/Astronautics group is using this common household accessory to prove a point.

In a display just outside Bldg. 4 library at San Diego three hangers ranging from a simple 3-cent wire type to a contoured wooden model costing 30 cents, illustrate the aims of GD/Astro's Value Engineering Seminar program by raising a question. Is a 30-cent hanger really needed, or can the job be done effectively with the 3-cent variety?

The seminar series, now in its second year, emphasizes reduced production costs through sound design practice. Over two-week periods, four-man teams from seminar groups of 12 to 16 key employees from various departments work on selected projects. Their goal is dollar savings through more efficient use of hardware or improved procedures.

Earlier this year, for example, one seminar team concentrated on a missile part known as a "mount and cover assembly." This item cost $187.46 and was a complex assembly of bent brackets, machined parts, and rivets.

"This part is needed simply to hold another unit in place, permit its easy installation and removal, and to provide accessibility," the team reasoned. Result of their study was a simplified angle bracket which did these jobs for a cost of only $12.40.

Other team projects during the year have touched subjects ranging from flight articles and manufacturing methods to test procedures, with indicated potential savings of 20 to 93 per cent.

Biggest value of the program, however, is to individual seminar participants who bring a new kind of value-conscious thinking back to their regular jobs.

One seminar graduate tells of being questioned on his purchase of three electronic items for use on an engineering project, when a single precision unit was available. Prompted by value engineering experience, he replied that cost of the precision device was five times that of the three less exotic items, yet for his purposes performed no better.

"All seminar participants are highly qualified in their particular fields," said Everett Lindem, one of three value engineering seminar instructors. "The 'brainstorming' they get here helps GD/Astro give its customers more for their money."

Seminars are coordinated by GD/Astronautics educational services section of industrial relations. Dick Pferdner (Dept. 530-0), Lindem and George Pavlovich (Dept. 130-3) conduct the sessions.

RINKER TO SPEAK AT N.Y. CONVENTION

Kenneth K. Rinker, ARA commissioner of Astro Lens, is one of a select group of national photographic figures selected to speak at the 28th National Photographic Society of America Convention and Photo Festival.

The affair begins today (Sept. 27) and runs through Saturday at Hotel Statler-Hilton, New York.

Rinker will speak on "Multiple Exposures in 35mm Color." He has also been selected to moderate a special discussion.

Commissioner of Astro Lens since their formation, Rinker is the only two-time president of the Southern California Association of Camera Clubs, a group of about 18 area camera organizations. He is now a director of that group.



VALUE STUDENTS—G. T. Herring, left, and Deane Davis, right, compare present and suggested design for electronic package as Value Engineering Seminar graduate Lloyd Curtis, who proposed change, looks on. Proposal cuts package cost 63 per cent and weight by 67 per cent.

Con-Trib at Warren Makes $1,000 Gift To Sclerosis Society

WARREN AFB—General Dynamics / Astronautics employees here, through action of their Con-Trib-Club, have presented $1,000 to the Cheyenne Branch, National Multiple Sclerosis Society.

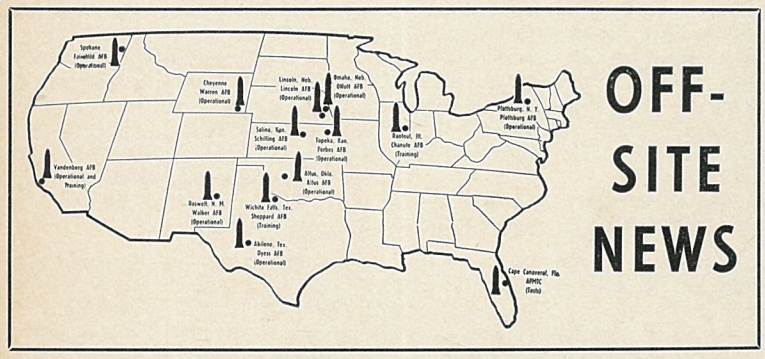
L. I. Medlock, GD/Astro operations manager, and Alice Watters, secretary to the Warren AFB Con-Trib-Club advisory committee, made the presentation.

Accepting on behalf of the Society was Mrs. Ward Ambrose, president of the Cheyenne Branch. Also taking part were Mrs. Robert Mills, a patient; Mrs. Marie M. Collins, secretary-treasurer; and Mrs. Chester W. Beaver, trustee, both of the Cheyenne Branch.





ON TOUR—GD/Astro folk at Vandenberg AFB whose duties prevent visits to launch sites were taken on special tour recently. In photo at right Jack Jones is guiding group. At left girls stride through tunnel connecting control center and launch site.



OFF-SITE NEWS

GENERAL DYNAMICS NEWS CONTACTS

AFMTC—P. C. Brown, ext. 3-4741.
ALTUS—John Lockwood, ext. 7141.
DYESS—G. D. Higgins III, ext. 8370.
EDWARDS RS—Chris Marques, ext. 27.
FAIRCHILD—C. C. Clickner, ext. 5596.
FORBES—Jane Cordner, ext. 4514.
LINCOLN—David Reichenbacher, ext. 264.
PLATTSBURGH—Kenneth Emery, ext. 6378.
SCHILLING—D. J. Rahlfs, ext. 8136.
SHEPPARD—Steve Delbridge, ext. 8243.
VANDENBERG—Lucy Signorelli, ext. 8-5046.
WALKER—Rod Bricker, ext. 2309.
WARREN—Alice Watters, ext. 73-716.



WORK CUT OUT—Provisioning conference at Schilling AFB during August brought together these Air Force and GD/Astro men to work out spares program supporting "F" series Atlas bases.

Mixed Bowl League Organized at Dyess For Astro Keglers

DYESS AFB—Formation of an "I.C.B.M. Mixed League" among GD/Astro employees here has been completed with the first night for bowling launched on Sept. 20.

The loop rolls at 8:45 p.m. each Wednesday at the Sands Bowl.

At an organizational meeting, teams named the following officers: Lewis Wallace, president; Geno White, vice president; Shirley Brown, secretary-treasurer; and Mickey Fahnestock, reporter.

Employees or members of their families wishing to roll as a regular or substitute in this league may contact Shirley Brown at OW-2-8517.

Plattsburgh Wives Welcome Newcomers

PLATTSBURGH AFB — Astro Wives Club here staged a special welcome to new General Dynamics/Astronautics wives in the area as part of their Sept. 13 meeting held at the Royal Savage Inn.

Mrs. R. L. Owston, president, was presented a gavel by Mrs. Walter Dunn, wife of the GD/Astro operations manager here.

Tentative plans were presented for a fall dance at a time and date to be announced at the group's next meeting.

ASTRO PAIR WED

SCHILLING AFB—Mary Scapin, Dept. 615-2, was married to Ernest Marugg, Dept. 615-2, in ceremonies in the base chapel here Sept. 2.



COST IMPROVEMENT—Harry Wieder, right, recently received certificate and commendation from Robert Harrell for Cost Improvement Proposal installed at AFMTC. Suggestion involved "action" stamp for expediting important correspondence.



TOGETHER—Ray Harbert, front, GD/Astro operations manager at Dyess AFB, has completed assembly of staff for task of activating "F" series facilities at that Texas base. In second row, from left, are, J. W. Mullen, F. R. Fitzmaurice, Tye King, Frank Harbin and Greg Thomasson. Back row, same order, Bill Griffis, Ernest Smith, T. R. Daugherty, J. D. Tate, E. A. Black and W. D. Mead.



READY FOR SEASON — Mitzi Sue and Teddy Bear, English bulldogs belonging to GD/Astro's E. C. Dell, again will be mascots of Altus, Okla., high school. They are shown "smiling" broadly with unidentified handlers prior to opening of football season.

'F' Series Spares Studied In Schilling Conference

SCHILLING AFB—A round of conferences here last month brought together representatives of various Air Force organizations and General Dynamics/Astronautics to work out details of spare parts programs for "F" series Atlas bases.

Called a provisioning conference, sessions were held primarily to determine what spare parts will be bought to keep Real Property Installed Equipment (RPIE) operational.

A Recommended Spare Part List (RSPL) prepared by a GD/Astro team was the starting document.

Among those taking part were San Bernardino Air Materiel Area (Norton AFB) representatives H. V. House, Richard Stearns, Don Payne and W. H. Armstrong of that base's Detachment #14, SATAF. From San Antonio Air Materiel Area's SANUSE organization were E. C. Klefforth, C. L. Kruse and L. C. Sopher.

GD/Astro was represented by M. G. Creech, R. L. Slaughter, H. J. Stempski, D. Galyean and D. D. McPeck.

Harold Young of the 2709th AF vehicle control group also attended.

Dyess Group Helps Hurricane Victims

DYESS AFB — When members of Astro Wives bowling league here turned out for their weekly action Sept. 17 they (all 48 of them) brought along something extra—aid to be passed on to Hurricane Carla victims.

By the time all were accounted for, five large barrels of food and clothing were assembled, packed and turned over to Salvation Army for shipment.

Mrs. Pete Bagrow coordinated the effort.

Astro Girls Marry In Altus Ceremonies

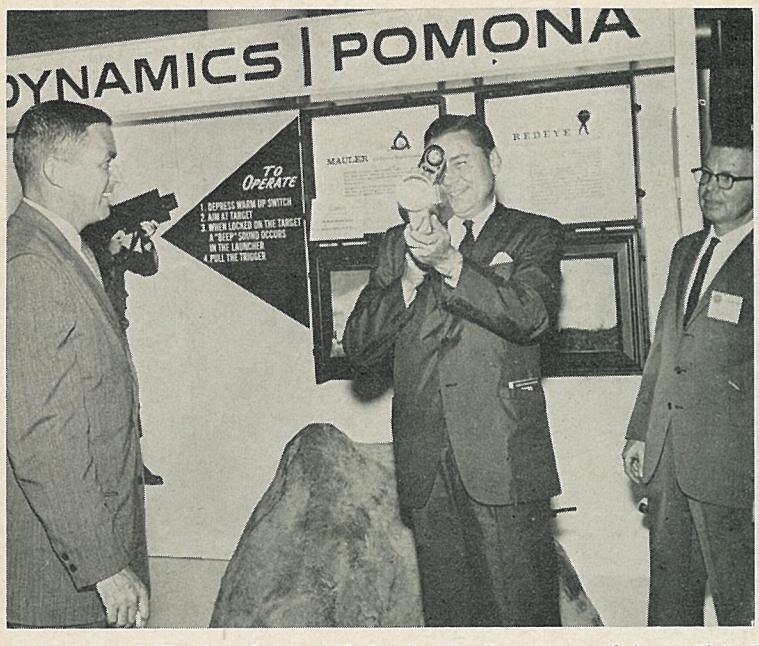
ALTUS AFB — Two General Dynamics / Astronautics employees here were married in separate ceremonies recently.

Linda Carter (Dept. 617-1) and Jim Holland were married Aug. 4 at the First Baptist Church, Altus.

Sharlene Tucker (Dept. 617-1) married Robert D. Pruitt at Sept. 1 services conducted at the same church.



ASTRONAUTICS HELPS—Astro employees at Warren AFB presented $1,000 Con-Trib-Club gift recently to Cheyenne Branch, National Multiple Sclerosis Society. L. I. Medlock, Warren AFB operations manager, and Alice Watters, Con-Trib-Club secretary, left, made presentation. Seated are Mrs. Robert Mills and Mrs. Ward Ambrose, president. Standing are Mrs. Marie M. Collin, secretary-treasurer, and Mrs. Chester W. Beaver, trustee.





ON TARGET—In photo at left above, Secretary of Army Elvis Stahr tries Redeye simulator during recent Association of U. S. Army meeting in Washington, D.C., with E. J. (Ted) LeFevre, left, now General Dynamics assistant vice president and general manager of Washington Office, and Vince Johnson, GD/Pomona Redeye project office. In photo at far right Gen. Clark L. Ruffner, U. S. Military Representative at NATO, tries his hand.

U.S. Jet Ace Checked Out In Hustler at Mach 2

America's first—and top—jet ace was "tremendously impressed" with his recent checkout ride in a B-58 Hustler.

"The Hustler's performance was outstanding," said Col. James Jabara, who for a time put a B-58 bomber through Mach 2 paces. It was his first time at the stick of a four-engine airplane.

Colonel Jabara recently volunteered for B-58 duty and is now enrolled in 43rd Bomb Wing's Combat Crew Training School.

The crack fighter pilot of two wars said the Hustler appeared to be a "fine weapon system" which could very likely maneuver with many fighter planes.

He is eminently qualified to draw a comparison, for it was in fighters of different eras — the P-51 Mustang of World War II and the F-86 Saber Jet of the Korean conflict—that he registered 18½ enemy planes destroyed.

He became this country's first jet ace when he blasted 15 Russian-built MIG-15s out of Korean skies on two separate tours in 1951 and 1953. Thus he became—and remains—America's top jet ace.

He noted that kills were far more difficult to come by in jets (600 mph) than prop-driven planes.

"And the speed of today's supersonic fighters would make aerial combat even more difficult," said the colonel, who recently flew F-104s.

Other first-impressions from flying a four-engine bomber: "More individual discipline and know-how on the pilot's part."



SMOOTH—Col. James Jabara, America's top jet ace who recently joined 43rd Bomb Wing, recounts first ride in B-58 Hustler to Col. J. A. Hutchison.

Redeye-Mauler Display Viewed By Thousands

An estimated 3,000 persons visited the General Dynamics/Pomona Redeye-Mauler display early this month at the annual meeting of the Association of the U. S. Army in Washington, D. C.

The display featured a Redeye "shooting gallery" and shadow boxes featuring pictures of Redeye and Mauler missiles. In the "shooting gallery," visitors were permitted to shoulder a Redeye missile launcher and simulate firings against a model helicopter target. Proper operation of the launcher resulted in launch sound effects and simulated destruction of the target.

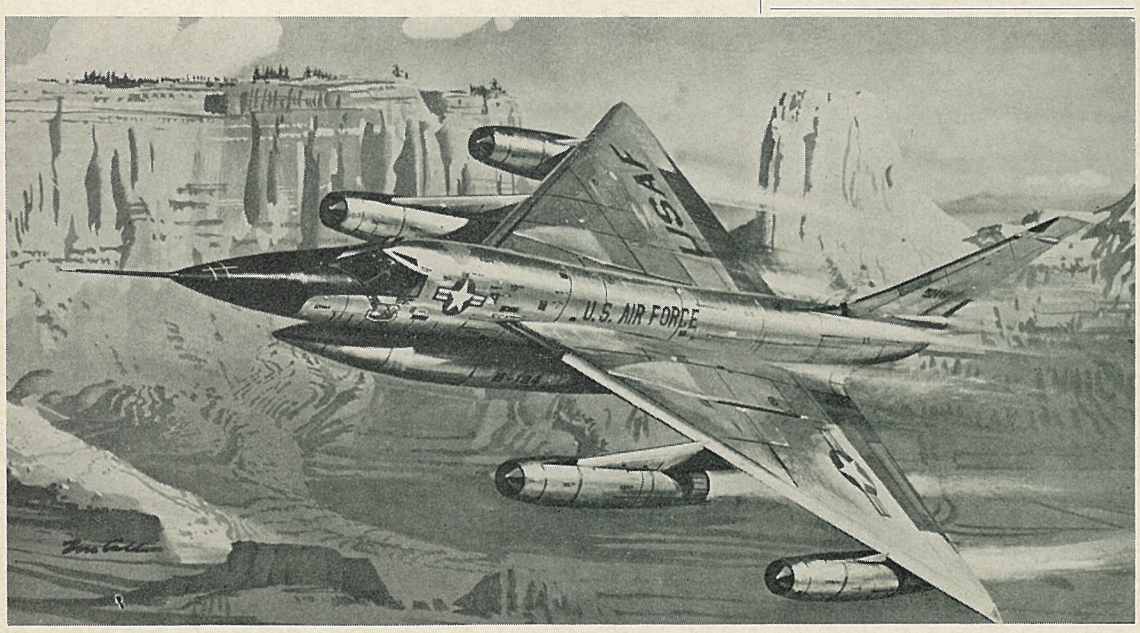
Among high-ranking visitors who operated the Redeye simulator were: Secretary of the Army Elvis Stahr; Gen. Clark L. Ruffner, USA, U. S. military representative to NATO Standing Group; Gen. Bruce C. Clarke, USA, commander in chief of the U. S. Army in Europe; and many other representatives of the U. S. Army and foreign military establishments.

G. I. Siegel of customer requirements plans and programs was responsible for the unique design and concept of the display booth. V. W. Johnson, of Redeye project office, was responsible for the electronic packaging for the "shooting gallery." The booth was manned by Johnson, Siegel, and D. O. Campbell of General Dynamics/Pomona.

Troop Carrier Wing Seeking Reservists

An invitation to Air Force Reserve members to join the 452nd Troop Carrier Wing at March AFB, Riverside, has been extended by the squadron flight commander, Major G. D. Hoffman, GD/Astro Dept. 521-1.

The pay-status reserve unit has openings for both officer and enlisted personnel. Call ext. 3216.



LOW-LEVEL—Artist's conception shows Mach 2 Hustler on low-level mission. B-58 can fly up to Mach .9 at altitudes of less than 500 feet, making it difficult, if not impossible, to detect by radar and equally difficult to intercept.

Nine Squadrons Groom Convair Deltas as 'Trial By Combat' Approaches

Nine Air Force squadrons flying Convair-built jet interceptors will enter teams in the 1961 USAF Worldwide Weapons Meet (William Tell) at Tyndall Air Force Base in Florida next month, Oct. 23 to Nov. 3.

Matching weapon firing capability in a normal air defense environment will be four F-106 teams; five F-102; and four F-101.

Teams flying F-106s will represent 539th Fighter-Interceptor Squadron, McGuire AFB, N. J.; 11th FIS, Duluth, Minn.; 498th FIS, Geiger AFB, Wash.; and 456th FIS, Castle AFB, Calif.

F-102s will go from 331st FIS, Webb AFB, Texas; 59th FIS, Goose Bay, Labrador; 317th FIS, Elmendorf AFB, Alaska; 182nd Air National Guard squadron, Kelly AFB, Texas; and 3555th Combat Crew Training Wing, Air Training Command, Perrin AFB, Texas.

No squadrons based outside of the United States with USAF in Europe or Pacific Air Command will be entered in this year's competition.

Jet interceptors, all of the Century series, will demonstrate effectiveness of their weapon systems against Q2C drone targets launched either in the air or from the ground. F-102 teams will compete in a manual control environment using voice communication; F-106 teams will go through maneuvers in SAGE (Semi-Automatic Ground Environment) with data link communications.

F-102s are equipped with GAR-1D missiles; F-106s with MB-1T and GAR-4 missiles.

Recognition will be given top aircrew - controller - maintenance teams.

Coordinating General Dynamics/Convair's participation is H. J. Richardson of military requirements, named GD/Convair project officer by J. H. Famme, division general manager. Hosting the 1961 Weapons Meet is the Air Defense Command.



GET SET—Among AF teams getting set for Weapons Meet in Florida next month are these members of 456th FIS at Castle AFB Calif. Above, from left: Lt. Col. James L. Price, 1st Lt. Everett E. Dencklau, Capt. William A. Curnuette, pilots; standing: Maj. Joseph A. Mentecki, materiel control officer, C. W. (Chuck) Stevens, GD/Convair rep, 1st Lt. Rex D. Howerton, pilot, 1st Lt. Christopher D. Pulos, A&E.

B-58 Over Water Pod Drop A Success Off Florida

A successful pod drop over water was made by Hustler No. 38 recently off the coast of Florida near Fort Walton.

Pilot Fred Voorhees made the supersonic drop of an upper component at an altitude of 35,000 feet at Mach 1.6.

"The sortie demonstrated successfully that the pod's aiming and fusing system will function properly on water impact," said Jim Graham, team captain.

Attempts by two Navy crash boats and a 105-foot Navy barge to locate the upper component after the drop were unsuccessful. However, telemetry data produced positive results.

Two distinct shock waves—one by the Hustler and the other by the pod—were created by the drop. "But everyone in the area had been briefed on what to expect," Graham said.

Jim Hayden, GD/Fort Worth photographer filmed the drop from an F-104 furnished by Air Force Special Weapons Center. Another FW photographer, Bill Williams, filmed the event from an F-106B from Tyndall AFB at Panama City, while Gene Hartsman took pictures from a helicopter.

Fred Hewes flew second station on the mission, and Ken Timpson occupied third station.

Graham lauded Team Captain B. L. Schultz and his crew for having the plane ready for flight "the day after Labor Day."

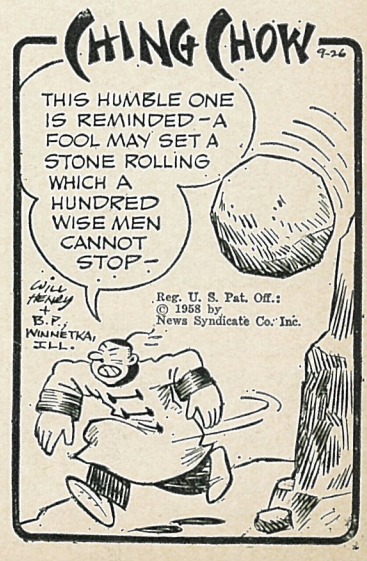
A low-level, upper-component drop over Test Area No. 75 at Eglin AFB was considered a "partial success."

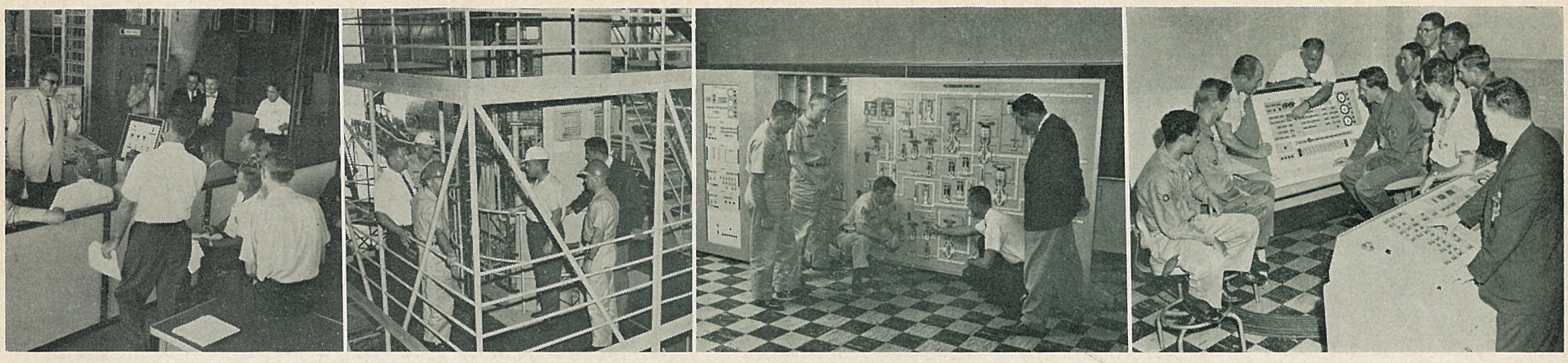
The low-level run, aimed at confirming integrity of the pod system at sea-level conditions, was to be made again. Also upcoming is a low-level drop of the tank (lower component of the two-component pod).

All drops at Eglin are the first made at sea-level. For some months, Hustlers No. 4 and 38 have been used for both low and high-level pod drops over both the Tonopah Test Range and White Sands Missile Range.

CONSERVATION!

Not Conversation--





FINAL ROUND—In relatively short time (since 1959) GD/Astronautics has designed, built and installed complicated training devices for D, E and F missilemen. Final selloff at Sheppard AFB took place this month. From left: J. E. Scott, chief of product support, demonstrates T-353 facility air conditioning trainer; scale model of silo installation is inspected by R. M. Kirkpatrick of Astro training, Maj. W. Conant, deputy director missile training, Maj. C. Shrader, Atlas branch training, J. F. Self, AF instructor, Capt. J. Kissinger, and Scott; selloff of T-367, showing Maj. William Forsythe, Atlas training branch chief, Lt. Col. A. B. Scheaffer, missile training director, T/Sgt. R. M. Frazier, C. Petty of Astro engineering; Astro instructors Bert Kenney and Steve Delbridge explain devices to AF technicians.

GD

ASTRONAUTICS EDITION

GENERAL DYNAMICS NEWS

Vol. 14, No. 20 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, September 27, 1961



WELCOME—J. R. Dempsey, GD/Astro president, greets Capt. J. R. Tackett, Lt. Col. N. E. Hartwell, Capt. C. R. Harmatys and Maj. D. W. Cunningham, recent arrivals for Air Force Executive Development with Industry training program.

Atlas Trainer Program For AF Reaches Climax

Before the end of the year General Dynamics/Astronautics will be putting the finishing touches to a $30-million project, a little-known but highly important part of the overall Atlas program.

The project centers around design, fabrication and installation of training devices utilized in teaching both individual and team skills to men who will man operational Atlas bases.

Installation has been at three locations. Two (Sheppard AFB and Chanute AFB) teach individual skills. Vandenberg AFB is a crew or team training base where individual skills are welded together.

As a result of this project Astronautics has earned distinction as a designer and fabricator of training devices. In fact, Astronautics has turned out more units for Atlas training, both in number and dollar value, than have ever been built for a single weapon system. More than 30 major trainers, some consisting of multiple sections and components, have been built. The first was turned over to the Air Force in October, 1959. The last under the present concept is scheduled for installation at Vandenberg AFB by mid-December.

Time has been a key factor with

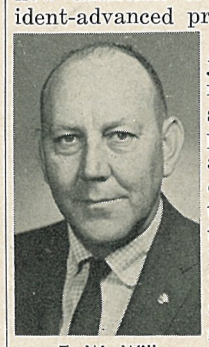
(Continued on Page 2)

Executives Appointed In Advanced Planning

Five executive appointments within advanced product planning (Dept. 105) have been announced by J. R. Dempsey, General Dynamics/Astronautics president.

The five are initial appointees in the new organization with additional appointments pending. All report to W. H. Patterson, vice president-advanced product planning.

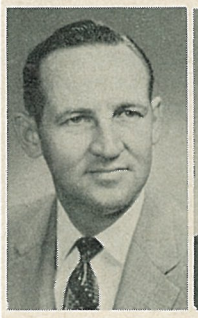
Named directors of advanced product planning were J. J. Crowley and Bruce McKay. J. W. Petre and J. S. Berggren have been appointed managers of advanced products. T. W. Wills is now assistant to the vice president-advanced product planning.



T. W. Wills

Crowley is joining Astronautics after serving as vice president and assistant general manager at the Grand Central Rocket Co. From 1957 until 1959 he served as executive assistant to the vice president-engineering of General Dynamics Corporation.

McKay is also a newcomer, moving to Astronautics from the Bell Aerosystems Co. where he was assistant vice president and director of marketing. A graduate of the University of Washington and former student at UCLA and the California Institute of Technology, McKay has been with Bell since 1960. Prior to that time he worked at Piasecki Helicopter Co., Marquardt Aircraft and Northrop Aircraft in various executive positions.



J. S. Berggren



J. W. Petre

Petre, a graduate of Brooklyn Polytechnic Inst., has been with Astronautics since 1960. His most recent assignment was base activation manager for "F" series bases. Before that time he was projects manager for Airborne Instruments Laboratory, Melville, N. Y. For 18 years Petre was with Fairchild Engine and Aircraft Corp.

Berggren is a graduate of the University of Minnesota and holds a master's degree from the University of Michigan. He worked for Curtiss Airplane Division prior to 10 years in the Air

(Continued on Page 2)

Astro Research Projects, Future Tasks Outlined

Top General Dynamics/Astronautics executives formed a panel to answer questions about the division and its operation at a meeting of GD/Astronautics Management Club this month.

J. R. Dempsey, president; Mortimer Rosenbaum, executive vice president; W. W. Withee, vice president-research and engineering; E. D. Bryant, vice president-operations; and W. H. Patterson, vice president-advanced product planning, replied to questions submitted by club members.

Frank J. Traversi, director of material, whose department sponsored the program, served as moderator. Some of the questions asked, with replies, are as follows:

QUESTION—Why doesn't General Dynamics have an arrangement for employees to purchase stock by payroll deduction?

ANSWER—Dempsey: We do not want to have any "prejudiced" purchases; employees buying stock because they work here. Stock is readily available through competent brokers. What an individual does with his savings is his business.

Q—How long will GD/Astro's off-site operations continue and what will happen to base employees when these operations are complete? **A** — Rosenbaum: At present, it appears the Atlas activation program will be completed next year. However, we are trying to obtain other ICBM base activation jobs. When activation is completed we intend to bring personnel into the San Diego operation to the maximum degree possible.

Q—Will GD/Astro ever completely take over Plant 2? **A**—Dempsey: If work demands, yes. Although we occupy much of the plant now, it is administered by GD/Convair. Actually, it doesn't really matter who's in charge of Plant 2.

Q—What research projects are now under way at GD/Astro? **A**—Withee: Today's research is the foundation of tomorrow's business. We spend $6 to 6½-million for research annually. A few of our present study areas include space medicine, the MARS space station mockup, microfilm techniques for electronic circuitry, the vacuum test chamber, and micrometeoritics. We are foremost in the nation in studies of metals at cryogenic temperatures. In terms of future business, these programs may be applied to Saturn and Apollo; after that, to MARS or similar projects.

Q—What is the outlook for acceptance of GD/Astro as a recognized electronic manufacturer? **A**—Bryant: We are already rec-

(Continued on Page 2)

Frank Kemper Factory Mgr.—Electronics

Appointment of Frank B. Kemper as factory manager-electronic manufacturing has been announced at General Dynamics/Astronautics by E. D. Bryant, vice president-operations.



Frank Kemper

At the same time, J. P. Hopman, now factory manager, was designated factory manager-assembly and fabrication.

In announcing the changes, Bryant indicated the new assignments were in recognition of the growth of Astronautics manufacturing operations.

Kemper has served as superintendent of the electronic manufacturing department at Astronautics since 1960. Prior to that time he was superintendent of primary and final assembly and electronic operations. He has been a superintendent since the Astronautics organization was created, serving before that as a GD/Convair superintendent (1952-56) and general foreman in electronics and radio (1947-52).



HEAD TABLE—These were principals at recent "Blue Badge Turkey Talk" for GD/Astro Management Club. Astro President J. R. Dempsey is at far right.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Sept. 11.

Dept. 120, Communication: To editorial supervisor, T. A. Chapman. To graphic reproduction asst. supervisor, R. W. Gualco.

Dept. 170-2, Office Services: To supervisor, R. J. Waller. To asst. supervisor, J. G. Godfrey.

Dept. 181-0, Project Planning and Methods: To factory methods asst. supervisor, W. F. Van Dusen Jr.

Dept. 182-0, Facilities Control: To facilities requirements asst. supervisor, F. N. Holmes.

Dept. 193-3, Industrial Accounting: To timekeeping asst. supervisor, G. W. Megeath.

Dept. 220, Manufacturing Control: To foreman, W. C. Ruzich. To asst. foreman, E. D'Ercole, J. D. Syson. To asst. supervisor, V. L. Akers.

Dept. 250-1, Plant Engineering: To project control asst. supervisor, F. B. McIntyre.

Dept. 321-0, Personnel Systems Engineering: To systems supervisor, R. E. Dixon.

Dept. 322-5, Support Publications: To support publications asst. supervisor, R. V. Lacey, L. D. Minor.

Dept. 331-1, Support Supply: To GFE asst. supervisor, G. R. Bigadza.

Dept. 333-2, Off-site Logistics: To support logistics asst. supervisor, J. M. Rowland.

Dept. 335-3, Service Parts: To support logistics asst. supervisor, R. T. McNoun.

Dept. 350-3, Support Field Operations: To asst. supervisor, C. L. Bennett.

Dept. 351, Field Modification: To maintenance and facilities general supervisor, C. H. Towner. To inspection supervisor, H. E. Cason. To field modification group engineer, F. A. Sweger. To subcontractor coordinator, L. E. Rowe. To manufacturing control asst. supervisor, J. A. Sweeney. To asst. foreman, I. E. Alcon, D. T. Barrett, R. L. Buckman, C. A. Hicks, M. C. Laing, S. W. Sims, P. T. Vann, R. W. Whited.

Dept. 531-3, Systems Design: To design group engineer, F. H. Bloschies, J. B. Ona, W. S. Williamson. To asst. design group engineer, M. S. Fader.

Dept. 539-2, Design Liaison: To asst. design group engineer, H. B. Farrar.

Dept. 561, Test Laboratories: To standards lab group engineer, H. C. Keith, J. E. Vondracek.

Dept. 562-1, Test Laboratories: To test lab group engineer, G. B. Wood Jr.

Dept. 564-5, Test Laboratories: To test lab group engineer, G. F. Sheets.

Dept. 565-3, Test Laboratories: To test lab group engineer, F. Wallace Jr.

Dept. 782-0, Electronics Manufacturing: To asst. foreman, F. Berry.

Dept. 812, Outside Production—AGE: To buying supervisor, V. J. Tarantino. To purchasing agent, E. J. Bryant, J. C. Dingman.

AFMTC

Dept. 571, GD/Astronautics Operations: To chief of quality control-base, R. H. Nicholson. To foreman, R. D. Beasley. To asst. foreman, G. W. Leonard.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To activation engineering asst. supervisor-base, G. C. Bestor, J. C. Sims. To asst. foreman-transportation, J. L. Manry. To asst. foreman, M. L. Bash, F. W. Cropper, T. G. Saint Sing Jr.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To industrial engineering asst. supervisor-base, I. P. Bagrow. To production control asst. foreman-base, R. F. Barone. To inspection asst. supervisor, W. T. Black. To asst. foreman, W. J. Butts, A. G. Johnson.

EDWARDS RS

Dept. 575, GD/Astronautics Operations: To asst. foreman, W. O. James.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To asst. foreman, A. J. Baskin, B. G. Lewis.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To chief of quality control-base, J. C. Major. To chief of material-base, O. Tucker. To asst. test conductor, R. F. Holder. To asst. foreman, L. L. Holland.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To production control foreman, A. Pellegrin. To engineering asst. supervisor-base, R. E. Pahan.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To receiving and stores foreman, H. G. Thatcher. To material control asst. supervisor, D. D. Bridges. To receiving and stores asst. foreman, J. E. Boardman.

Births

MAIN PLANT

DOLLAR—Son, Johnny Edward, 9 lbs., 7 oz., born Sept. 2 to Mr. and Mrs. E. W. Dollar, Dept. 771.

HOLMSTEAD—Son, Gary Lynn, 8 lbs., born June 23 to Mr. and Mrs. G. M. Holmstead, Dept. 595-1.

OERMANN—Son, Kevin Carl, 8 lbs., 4 oz., born Aug. 25 to Mr. and Mrs. W. A. Oermann, Dept. 535-5.

FORBES AFB

HARAWAY—Son, Alva Theodore, born Sept. 10 to Mr. and Mrs. A. E. Haraway, Dept. 614-9.

SCHILLING AFB

ZENON—Son, Raymond Augustus Jr., 6 lbs., 9 oz., born Sept. 4 to Mr. and Mrs. R. A. Zenon, Dept. 615-8.

DYESS AFB

SPROLES—Son, Scott Wesley, 6 lbs., 15½ oz., born Sept. 17 to Mr. and Mrs. Sam G. Sproles, Dept. 618-0.

Service Emblems

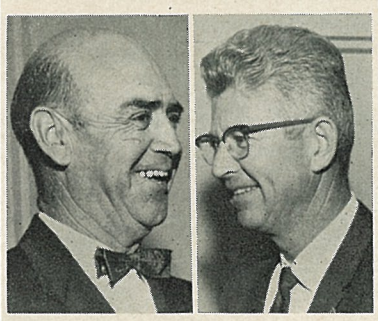
MAIN PLANT

Service emblems due during the period Sept. 16 through Sept. 30:

Twenty-five-year: Dept. 181-0, Michael Brooks; Dept. 400-0, L. G. Granstedt.

Twenty-year: Dept. 290-2, J. R. Leadaman; Dept. 401-5, F. F. Hammond; Dept. 402-1, I. K. Raney; Dept. 460-0, T. G. Graves; Dept. 831-1, A. B. Mercer.

Fifteen-year: Dept. 152-0, A. B. Breslauer; Dept. 220-1, E. G. Bradshaw; Dept. 280-2, Mary J. Zelno; Dept. 402-1, G. R. Vollmer Jr.; Dept. 604-0, Loucene H. Morris; Dept. 759-0, Peter Molis; Dept. 842-1, J. C. Leisure.



PIN AWARDS—P. F. Grijalva, Dept. 831-1, left, and J. M. Jones, Dept. 840-0, recently received 25-year service awards from Mort Rosenbaum, executive vice president of GD/Astro.

Ten-year: Dept. 170-2, Alice A. Wicks; Dept. 191-0, C. E. Chapman; Dept. 220-6, J. W. Hare; Dept. 250, R. F. Garcia, E. O. Stein Jr.; Dept. 331-1, H. P. Miller; Dept. 335-3, H. A. Lambert, Marian L. Smith.

Dept. 343-2, W. R. Smith; Dept. 344-2. J. C. Scott; Dept. 402-1, J. S. Friedman; Dept. 535-5, W. R. Buevens; Dept. 549-5, Lois S. DeSota, Dept. 551-1, D. C. Prim; Dept. 581-1, J. B. Grafa; Dept. 591-5, W. F. Riggle; Dept. 594-0, R. C. Armstrong; Dept. 599, D. E. LaMotte, Dorothy M. Wicks; Dept. 600-0, Mary R. Gengler; Dept. 759-0, Harry Fontenot; Dept. 820-0, Dorothy C. Baber.

FAIRCHILD AFB

Twenty-year: Dept. 616-3, L. E. Ford.
Ten-year: Dept. 613, E. J. Bryant, J. H. Galvin, V. W. Kenner.

FORBES AFB

Ten-year: Dept. 614-7, R. L. Cantarini.

SCHILLING AFB

Twenty-year: Dept. 615-4, A. N. Meziere.

VANDENBERG AFB

Twenty-year: Dept. 576-3, W. J. DeConcini.
Ten-year: Dept. 576-3, J. R. Beasley, J. C. Byrne.

WALKER AFB

Fifteen-year: Dept. 619-4, C. J. Dunphy.

Deaths

MAIN PLANT

MacHALE—James Ashley, Dept. 220-6 (999). Died Sept. 10. Survived by wife, Alberta.

Executives Appointed In Advanced Planning

(Continued from Page 1)

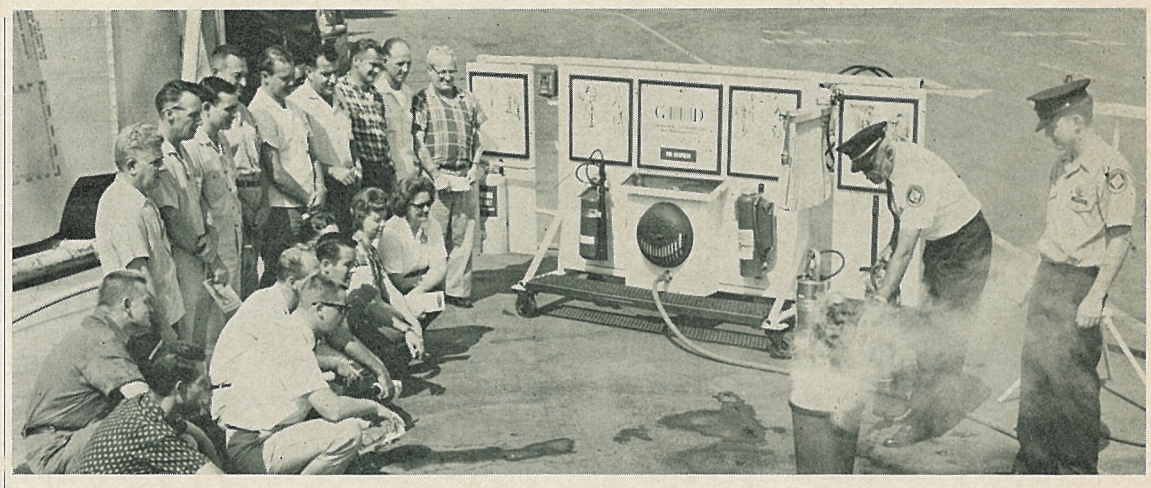
Force, with extensive service as a research and development officer. He joined Astronautics in 1956 as a program administrator in long range planning.

Wills attended Harvard, Stanford and Duke Universities. He has been with General Dynamics and its predecessors for 21 years. He worked in various executive posts at Convair in industrial relations and came to Astronautics as employment manager and assistant to the manager of industrial relations when the division was formed. He has served most recently as chief of personnel administration.

Astro Man Is First Student at College

First student to register at newly opened Grossmont College was T. I. Jaramillo, General Dynamics/Astronautics assistant foreman, Dept. 756-0.

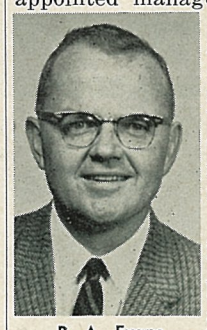
Grossmont is a new junior college serving the area east of San Diego. Last year, Jaramillo attended San Diego City College, and plans to continue studies at San Diego State College after completing Grossmont courses.



FIRE'S OUT—Lt. H. C. Neel and Fireman L. G. Worley are snapped during demonstration utilizing new unit for indoctrinating employees in emergency fire fighting equipment use. Unit contains one of every type emergency apparatus available for fighting fires at GD/Astro.

Evans Named Personnel Mgr.

R. A. "Ross" Evans has been appointed manager of personnel administration at General Dynamics/Astronautics, M. V. Wisdom, director of industrial relations, announced.



R. A. Evans

Evans succeeds T. W. Wills who has become assistant to W. H. Patterson, vice president-advanced product planning.

J. A. Croft has assumed Evan's former post as chief of educational services.

Evans is responsible for educational services, employment, employee services, safety and Plant 2 industrial relations.

Evans holds a bachelor degree in chemistry (San Diego State) and a master of arts degree in chemistry (UCLA). Before joining Astro in 1959 he was a civilian educational adviser to the commanding officer of the Service School Command, U. S. Navy Training Center. Prior to 10 year's educational work with the Navy, Evans taught college science courses and worked as an engineer in the aircraft industry.

Croft has been with General Dynamics since 1955 when he joined Convair as a special courses instructor. He later became an assistant supervisor in training and came to Astro in that capacity in 1957. He is a graduate of Los Angeles City College. Previous work included service with Lockheed—Vega and RCA Service Company, Inc., where he was a field representative.

AF OFFICERS REPORT FOR YEAR AT ASTRO

Four Air Force officers participating in this year's Air Force Executive Development with Industry program recently reported to General Dynamics/Astronautics.

Lt. Col. Norris E. Hartwell Jr. and Maj. Donald W. Cunningham will be trained in project management, with emphasis on management structure, engineering approaches, production methods.

Capt. Casimir R. Harmatys and Capt. James R. Tackett have begun a junior executive program featuring structures, data processing, ground-space communication, recovery systems, propulsion, auxiliary power, and administration.

During their nine-month stay, the officers will gain a working knowledge of the astronautics and space vehicle fields, and become familiar with GD/Astro's activities and capabilities in these areas.

Dr. Leadon to Teach Graduate Course

Dr. B. M. Leadon, senior staff scientist of General Dynamics, will teach a fall graduate course at San Diego State.

The course, "Heat and Mass Transfer" will be offered by the Department of Mechanical Engineering.

Demonstrations Show How To Avoid Serious Blazes

General Dynamics/Astronautics has introduced a "new model" portable demonstration unit to be utilized in indoctrinating employees in emergency fire fighting.

Astro's fire department designed the unit and plant engineering handled fabrication which included remodeling original equipment which has been used in 392 demonstrations witnessed by 7,714 employees since May, 1958.

The new unit includes every piece of emergency fire fighting equipment currently available to employees. There is a hose reel, hose rack, fire alarm box, five types of extinguishers and a simulated sprinkler system complete with alarm bell.

Ten demonstrations monthly are conducted for employees at the main plant, materials building, Plant 2, Fordham Bldg. and Point Loma Test Site.

"Every employee is a potential emergency fire fighter," said Fire Chief A. C. Anderson. "Quick action and a knowledge of equipment has enabled employees to extinguish fires that could have been serious."

Although demonstrations are normally confined to factory and engineering departments, they can be scheduled for any group. Call the fire department, ext. 1811, for details.

Program For AF Reaches Climax

(Continued from Page 1)

Astronautics repeatedly meeting or beating schedules.

Typical is the current work on "F" series trainers. Actual design work began on most in March, with one starting as late as May. To date, finished installations are well ahead of schedule. At Sheppard AFB, where a majority of trainer installations has been made, some trainers are actually in use by students within 10 hours after "selloff."

Product support department is responsible. A trainer design section, under Mel Hart, supervisor, handles design work and administers the entire program. Each trainer has a principal engineer. Manager W. W. Pierce's support center provides fabrication crews. Activation tasks are handled by support field operations. Throughout the effort, valuable support has been provided by such functions as engineering, contracts, purchasing and others.

Multiple Air Force organizations are concerned. Air Training Command is the "customer," acquiring devices as specified for filling Strategic Air Command requirements.

Although care is taken that Atlas students are not assigned to tasks for which they have not been trained, the program does involve "surprises," W. E. Magnuson, customer training general supervisor, explained. Consoles are arranged so that instructors can introduce simulated malfunctions which students must identify and correct.

Experience gained in the Atlas program has opened the door on potential business. Similar training devices could be turned out for any weapon or space system. In fact, at the Air Force's request, each proposal being offered by Astro includes provisions for training devices and personnel courses.

"We have gathered a highly-skilled group of technicians who have adequately demonstrated efficiency in doing a good job on time," said E. A. Reynolds, director of product support. "We will use this group in moving still further into this important business prospect."

Astro Future Tasks Outlined

(Continued from Page 1)

ognized as such. Our efforts here are directed toward systems, manufacture, and procedures for vehicles and space systems. Our electronic function is designed to support these programs, and to excel in this support.

Q—Is there an interchange of administrative ideas and techniques among General Dynamics divisions? **A**—Dempsey: Certainly. In terms of personnel, R. H. Biron, General Dynamics senior vice president-industrial relations, and his staff have this responsibility. Committees also exist for the interchange of information in specific areas. And of course, the Board of Management is constantly exchanging information.

Q—To what extent does GD/Astro contribute to the San Diego community economy? **A**—Traversi: I have the figures on that. We presently run a payroll of $2 million a week. In support of the Atlas program, 660 county firms are involved, and incidentally, 500 of these are small businesses.

Q—What are our present building plans? **A**—Bryant: We are presently working on Bldg. 33A, which will be completed in November. No other immediate plans are "in the works" but of course, additional space will be added as our needs dictate.

Q—What new programs or study contracts were received during the past year? **A**—Patterson: In 1960 we were asked to bid on 321 items; we bid on 49 and received 14. In 1961 to date, we have received 214 requests, bid on 23 and received 11.

Q—What is the future of Centaur? **A**—Rosenbaum: This is one of the principal NASA boosters, and will be used for the Army ADVENT communication satellite series. We feel it will be very successful, and that, as with Atlas, there will be more orders to come. The future is bright, but we must remember that Centaur is now at the same stage as Atlas was before 4-A.

★ ★ ★

In a concluding statement, Dempsey urged employees to utilize normal channels to obtain answers to questions concerning the company.

"If an employee has questions, he should refer them to his supervisor," he said. "We'll pass them as far 'up the line' as necessary to get an answer."

General Dynamics NEWS

Successor to "Convairiety" (which for 13 years served plants of the former Convair Division of General Dynamics Corporation), West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

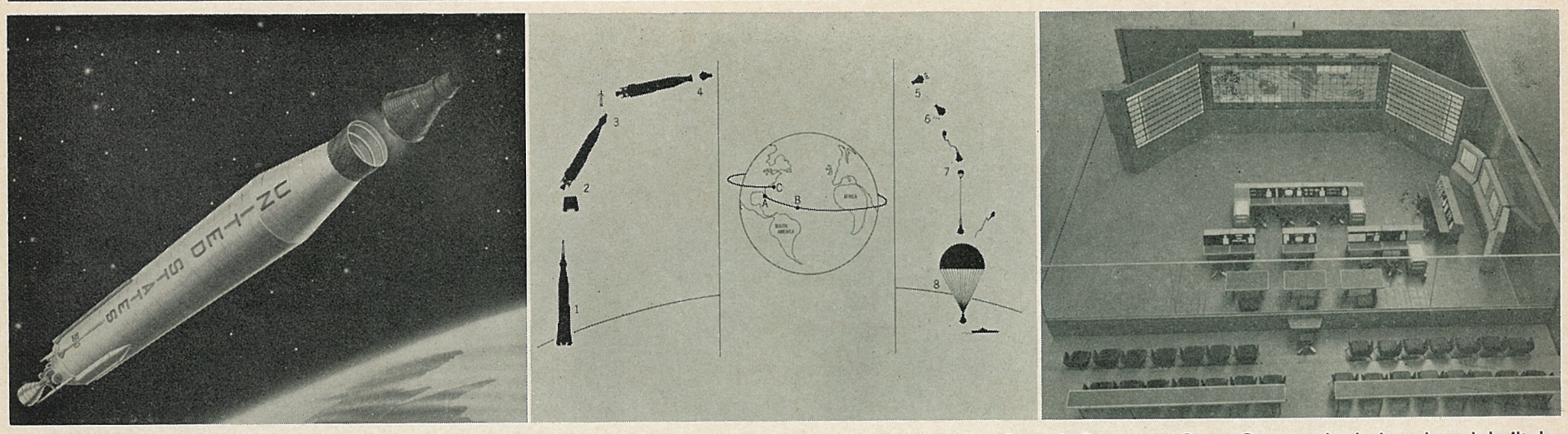
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ATLAS-LAUNCHED—In center above is flight path of successful Mercury shot Sept. 13 during which Atlas missile put capsule in orbit nearly 100 miles above earth. At left is artist's sketch at point of separation. At right is model of Project Mercury Operations Control Center at Cape Canaveral, designed and built by GD/Electronics for operation. General Dynamics President Earl Johnson congratulated Astronautics on "this all important one."

GD/Astro Population Tops 30,000 Mark

General Dynamics/Astronautics employment this month (Sept. 12) climbed above the 30,000 - person mark for the first time.

Total employment is up 5,890 over the first work day of 1961, reflecting an average weekly increase of more than 163 persons.

Off-site bases, including Sycamore Canyon, added 2,097 employees for a weekly average increase of 58 persons. Vandenberg AFB currently tops all with an employment of 1,520. Schilling AFB is now the largest operational base with 1,263 persons employed.

Approximately a third of Astro's total population is off-site.

GD/Convair Commended by AF As Palmdale Facility Closes

Seven years of operations at Palmdale, Calif., ended early this month for General Dynamics/Convair when facilities were turned over to North American Aviation.

Built specifically for the F-102 and F-106 programs, the Palmdale facility tested and delivered to the Air Force more than 1,000 airplanes. Peak employment was 2,600, reached in September, 1957. The last F-106 was turned over to the AF this summer.

Lt. Col. Charles W. Atterholt, chief of the USAF San Diego Air Procurement District, informed J. H. Famme, vice president and general manager for GD/Convair, that transfer of the facility "culminated a clearance and vacating operation which I consider most exemplary. Convair's performance was commendable both in timeliness of vacating the site and the quality of plant records transferred." Atterholt mentioned that North American officials had been particularly complimentary of F. J. Parker (who was in charge of the close down), commenting upon his cooperation and thoroughness.

North American is using the former Convair facility for B-70 work.

During GD/Convair operations in the Palmdale area, pilots logged more than 21,000 hours in more than 19,000 flights.

At the close down, Famme extended his appreciation to all personnel involved and specifically mentioned Parker and W. J. Martin (now in charge of quality control and production flight at San Diego), former base manager. Parker is now with GD/Astronautics as chief of stores and traffic.



TURNOVER—F. J. Parker turns over keys to Palmdale, Calif., facility to Jerry Barton of North American as GD/Convair's tasks in Antelope Valley phased out. From left: Lt. Col. Charles W. Atterholt, Maj. B. A. Hurlbut, Barton, Wallace Fore of North American, W. J. Martin of GD/Convair, Parker.

Atlas Shot Praised By Earl Johnson

J. R. Dempsey, General Dynamics/Astronautics president, received the following wire from Earl D. Johnson, president of General Dynamics Corporation, following the successful Mercury capsule orbit Sept. 13:

"Congratulations to you and your people for doing so splendidly on this all important one."

Earl D. Johnson.



ON THE PAD—Atlas 88-D is shown on pad at Cape Canaveral prior to shot that put Mercury capsule in orbit. "Cherry picker" is being used for last minute capsule check.

Atlas Reaffirmed As No. 1 Launcher

Successful orbit of a Mercury spacecraft Sept. 13 was the fifth successful scientific space launch attributed to an Atlas launch vehicle so far this year.

One other scientific space launch was considered partially successful, while a single shot has been declared unsuccessful for the year.

Atlas 88-D blasted off from Cape Canaveral's Complex 14 at 7:04 a.m. (PDT) after a countdown conducted by General Dynamics/Astronautics crews headed by T. J. O'Malley, test conductor. Participating were representatives of the National Aeronautics and Space Administration (NASA), sponsor of the Mercury program.

Some three hours and 10 minutes later, after an earth-circling flight of one hour, 46 minutes, a U. S. Navy destroyer fished the Mercury capsule from the Atlantic some 161 miles east of Bermuda. Meanwhile, Atlas 88-D, minus the booster section, continued to spin in an earth orbit with an apogee of some 158 miles and a perigee of approximately 100 miles. How long the missile tank would remain in space was unknown, although the period was estimated as a brief one.

Many messages of congratulations flashed back and forth following the flight. J. R. Dempsey, GD/Astronautics president, said in a message to employees:

"This flight again reaffirms that our Atlas is the nation's number one space launch vehicle. Our records now stand at an enviable 12 successes out of 16 scientific space launches. Our overall Atlas record is an impressive 63 successes out of 96 launches with 21 partial successful and only 12 unsuccessful. With your fine work, I am confident our record will continue to grow."

Of the 16 scientific space launches mentioned by Dempsey, seven have come thus far in 1961, including the Mercury shoot.

Starting the 1961 "parade" was a Jan. 31 launch of a Samos II spacecraft by Atlas 70-D from Vandenberg AFB's Point Arguello Complex which resulted in a near circular orbit (polar) of approximately 300 miles high.

A sub-orbit Mercury spacecraft launch followed Feb. 21. Atlas 67-D was launched from Complex 14 at Cape Canaveral. The spacecraft was recovered less than an hour later some 1,425 miles down range.

Considered partially successful was a March 25 launch of Atlas 100-D, carrying a Mercury spacecraft, from Cape Canaveral. However, an abort system to eject the spacecraft from the missile in emergencies, worked perfectly after the range safety officer destroyed the missile. As a result the Mercury spacecraft was recovered.

On July 12 Atlas 97-D with an Agena stage and a Midas III spacecraft was launched successfully from Point Arguello. It went into circular orbit 1,850 miles high as the heaviest upper stage yet boosted into high-altitude orbit.

Atlas 111-D, launched at Cape Canaveral, performed perfectly, but a Ranger I spacecraft failed to obtain orbit on Aug. 23.

The only unsuccessful attempt so far this year occurred on Sept. 9 at Point Arguello when an attempted launch of Atlas 106-D with a scientific payload failed.

Already a "workhorse" in the early space age, Atlas has been tabbed for more than 100 major launchings during the 1960s by NASA.

'Pilot Ready Room' Placed in Operation To Serve San Diego Air Travelers

Completed and put into use this month was a new "Pilots' Ready Room" at San Diego to serve government and military personnel visiting General Dynamics divisions there.

The 25x40-ft. concrete block building is located at the north end of Lindbergh Field, adjacent to Plant 1 salvage yard. Access is from Lindbergh Field side only.

The new building replaces the former pilots' lounge on second floor of Bldg. 4, Plant 1. Now all government planes coming to San Diego are directed to taxi to stops in front of the new lounge, relieving congestion on the field.

The ready room, erected under supervision of GD/Convair plant engineering, contains one large room for lounge, conference room, office. In the other half are showers, locker room, and rest rooms.

It is open 24 hours a day every day in the week. During day hours on weekdays the office is manned by W. W. Lynt of GD/Convair communication department. He assists government and military personnel arriving for business at General Dynamics plants in the San Diego area. Transportation and hotel accommodations are arranged, if needed; airplane service, fuel and oil provided, and minor repairs, if possible.

The lounge is not restricted to General Dynamics visitors. Building and services are open to personnel of all government planes landing at Lindbergh Field, if they wish to use it.

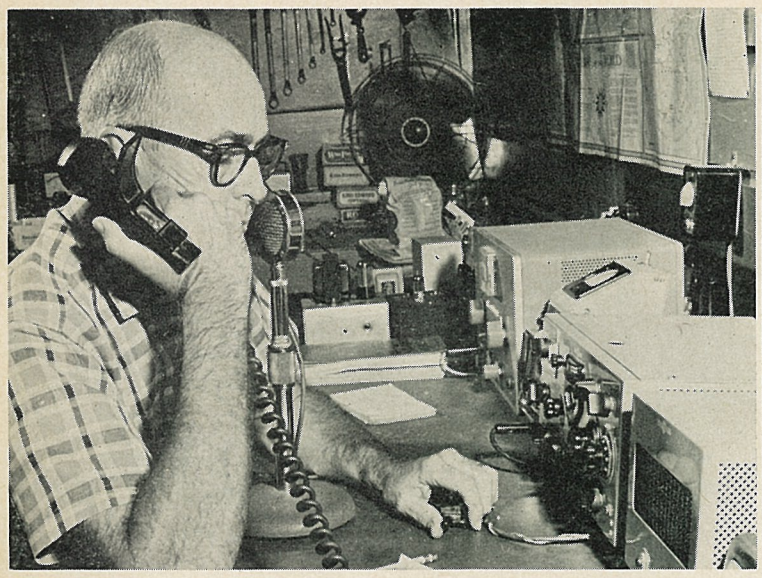
Arrivals and departures of military planes are charted on the operations board in Lynt's office. He is alerted to arrivals by Federal Aviation Agency officials.

Much of the traffic at the site is due to daily airlifts of the Air Force Space Systems Division which connect San Diego with Vandenberg, Norton, Edwards Air Force Bases and AFMTC in Florida.

ASA International Airlines flights #480 and #481 connecting San Diego with Los Angeles and Vandenberg AFB, departing at 7:15 a.m. and 3:15 p.m. daily, will continue to use the main Lindbergh Field terminal. General Dynamics people using the service are to check in at Swift Air Service office at the airport, as before.



BETWEEN FLIGHTS—Air Force officers from Colorado Springs relax at San Diego in new Pilots' Ready Room before departure. At counter, Cols. T. W. Bothwell and K. R. Kelsoe check with W. W. Lynt, in charge of lounge, and R. M. MacIver, General Dynamics manager of Colorado Springs office.



HURRICANE HELP—T. N. Lawrence, a GD/FW Dept. 75 electronics supervisor, personally handled more than 200 emergency messages over his short-wave radio during Hurricane Carla.

200 Messages

GD Ham's Radio Set Links FW With Hurricane-Hit Area

Hurricane Carla's only evidence in Fort Worth at the time was a gentle sprinkle of rain.

But on the Texas-Louisiana coast, Carla was a clawing, screaming, deadly harridan.

Fort Worth's atmosphere was calm. But thousands, including many General Dynamics employees, were worried about friends and relatives feeling Carla's fury. Phone and telegraph communication with the hurricane area was virtually impossible.

T. N. Lawrence, a GD/FW Dept. 75 flight line supervisor, was sleepy, but working hard.

In his "shack" behind his River Oaks home, he had been talking alternately into his radio mike and telephone, with only three hours' sleep in the past 24. Coworkers at the plant were calling every few minutes, hoping he could get some word of friends or relatives in the disaster area. Mrs. Mary Ritchey, Dept. 63 clerk, was one.

She and her husband, E. Ritchey, a Dept. 94 supervisor, were worried about the safety of his mother, Mrs. Kyle Huebner, in Beeville. Lawrence was able to reach another ham in nearby Victoria, who volunteered to help.

Lawrence stayed at his radio post 30 hours in two days, with only brief intervals of sleep. He relayed more than 200 messages, many of them for GD/FW friends.

A licensed operator since 1935, Lawrence has performed the same service in numerous disasters, including Fort Worth's 1949 flood.



LIKE HOTCAKES—Dee Ernst of GD/Astro employee services shows "Dynamic America" to Mr. and Mrs. J. B. Julian, both Dept. 576, as employees wait to purchase. Initial supplies at most points sold out quickly but reorders are on the way.

Electronic Manufacturing Forum Goes Through 'Dry Run' at GD/Pomona

A dress rehearsal of a forum to be presented Oct. 10 at the National Aeronautic and Space engineering and manufacturing meeting of the Society of Automotive Engineers was conducted Sept. 11 at General Dynamics/Pomona.

The forum, entitled "Electronic Manufacturing—Aerospace," will be conducted by J. Ferderber, manager of Hughes Aircraft Company's El Segundo Division, chairman; H. E. Jordan, GD/Pomona design group engineer, co-chairman; and H. F. Sawyer, GD/Pomona design specialist, secretary.

Panel members will be S. A. Francis, vice president and technical director of Sippican Corp., R. L. Johnson of General Motors, R. L. Landry of Motorola, Inc., and E. C. Sengletary of Texas Instruments. All except Francis and Sengletary were present for the rehearsal.

Jordan and Sawyer are among 18 General Dynamics men who will participate in various phases of the meeting.

New Phone Number Assigned Bldg. 19

General Dynamics Corporation offices in Bldg. 19 at San Diego now have a new outside telephone number—CY-6-6666.

Starting this week, the CY-6-6611 number has been assigned to General Dynamics/Convair only. All calls are handled through the plant switchboard in Bldg. 8, as well as those coming in for General Dynamics/Electronics. That division's outside numer is CY-8-4641.

In-plant calls can be dialed in the usual manner with company extension numbers.

GD/ASTRO'S ALBERT ON WATER BOARD

Sidney L. Albert, General Dynamics/Astronautics Dept. 567-6, was recently named to the San Diego Water Reclamation Commission by Mayor Charles Dail.

The newly organized 14-member commission will compile information and formulate policy related to reclamation of water from sewage, and advise the city manager and city council.

Albert has stated he will welcome ideas and suggestions concerning water reclamation from other employees. He served last year as president of the San Diego Industrial Development Council.

Toy Collection Starts Today in Annual Drive

Inspection and segregation of Fix-a-Toy donations starts today, and repair work by General Dynamics / Fort Worth volunteers will begin Oct. 9 at the Sheep Barn behind Will Rogers Memorial Coliseum.

"We'll use essentially the same area for repairing toys that we used last year," said Jim Kincannon, Fix-a-Toy general chairman.

Toy inspection and segregation will be under surveillance of Earl Weiher and R. C. Smith, co-chairmen.

Jimmy Harwell heads up repair activities, while C. C. Allen is serving as general coordinator.

Meanwhile, Kincannon urged employees to donate "repairable toys" of several types — dolls, stuffed and squeak toys, and others—which might be refurbished and passed on to some needy child this Christmas. Collection boxes have been placed at all entrance gates.

"If the toy won't fit in the box, call me at ext. 4325 and I'll make arrangements to have it picked up," Kincannon said.

Keep Guard Up! Colonel Warns

"If the American people allow their guard to slip, the communists will not hesitate to attack," stated Col. Frank E. Marek, Carswell Air Force Base Commander at the September meeting of the Society of Technical Writers and Publishers at Carswell AFB Officers' Club.

"The mission of the Strategic Air Command is to deter war, and, if necessary, to counter a communist threat by a strategic force powerful enough to insure military victory under any circumstance," commented the base commander in a speech given on "Mission of Strategic Air Command."

He stated that SAC is a global aerospace force and to concentrate on any one force would endanger the lives of all Americans. The Air Force plans to use manned bombers and missiles to counteract any communist threat, he added.

Ancy New Chairman Of Speaker Bureau

Jim D. Ancy, technical training specialist in educational services, is new chairman and coordinator of the General Dynamics/Fort Worth Management Club Speakers Bureau.

Ancy will announce special topics of seasonal interest and develop a speaking project with local Civil Defense authorities. Persons interested in securing speakers may contact Ancy at ext. 3446 or CI-4-0935.



MANY FACETS—Charm has many faces as demonstrated here by Judy Frydenlund, Dept. 130-5, and these many aspects will be covered in ARA's self-improvement courses for women opening Oct. 3 at GD/Astronautics in San Diego.



YOUNG CHAMPION—Bruce Robinson in highland costume, displays some of trophies won for skill at Scottish dancing. He's added dozen more since photo was taken last year.

Trophies Galore

Highland Dancer, 13, Sensation During 'Invasion' of Canada

It's been a great year for "clan Robinson" as Bruce, 13, son of Averill (GD/Astro Dept. 143-3) and Charles Robinson (GD/Convair Dept. 42) earned international recognition with his highland dancing.

Young Bruce, who has won a roomful of trophies for his colorful Scottish dances during the past several years, captured the MacGregor Trophy at the Vancouver (B. C.) Highland Games last month—the first time in its history the trophy has left Canada.

At the same event he won first in sword dance and third in highland fling.

A week later, Bruce whirled through the games at Victoria with a first, second and third in sword dance, reel and "sean trubhais" respectively. At San Francisco's Highland Games on Labor Day he captured five "firsts," a "third" for a "foreign" Irish jig, a gold medal, two trophies (one for California Championship), and a host of "bests."

Earlier in the year, the tartan-costumed youth collected other trophies at the Del Mar Fair, and at San Diego Highland Games.

Complicated routines of the authentic dances frequently have their origin in some event of Scottish history, and like most such folklore, have been intricately prescribed by tradition.

"The 'sean trubhais' for example, celebrates the release of the Scots from French domination, during which time they were forbidden to wear their traditional kilts," explained Mrs. Robinson.

"Bruce enjoys dancing," she added wistfully. "But at this point, we sometimes wonder where we'll put them if he wins more trophies."

Trades Desks

Young Scientist, Born in Congo, Joins GD/FW Research Group

A young Belgian scientist recently traded desks—thousands of miles apart.

Only a few weeks ago, Dr. Jacques Emile Romain was teaching mathematics in the Congo, where he was born and reared. Today, he's a staff scientist at General Dynamics/Fort Worth.

Dr. Romain, 35, is a member of the advanced design-applied research group at GD/FW, headed by Dr. E. L. Secrest. Although he has traveled widely in other parts of the world, it's his first time in the United States.

"I really didn't know what to expect," he confides. "But I like it very much." He's especially impressed by the friendliness shown him and his brunette wife, Ninette.

Dr. Romain was born in Elisabethville, Belgian Congo, where his father was a teacher in a government-sponsored school. Young Jacques was sent to Belgium for two years' pre-university training, and later, from 1945 to 1948, he attended the University of Brussels. He received his master's degree in mathematical physics in 1948.

Within a few months, the Romains were en route to the Congo, where Dr. Romain took a professor's post at a government school in Usumbara. Meanwhile, he completed work toward his doctorate, awarded by the University of Brussels in 1952.

When the Belgian government established a university for natives in Elisabethville in 1956, he joined the staff there, remaining until July this year.

Sensing the future of the Congo might be "uncertain" with the advent of independence granted on June 30, 1960, Dr. Romain sent his wife home to Brussels the month before.

He feels lucky that he, too, escaped involvement in the rioting and upheaval that followed independence. He narrowly escaped it, however. En route to Brussels in July, his plane landed in Leopoldville for refueling. "They got the passengers back on the plane rather hurriedly," he recalls. "I didn't know until later that half an hour after our takeoff, the airfield was invaded."

Dr. Romain speaks excellent English, which he studied "a little" in school, but learned mostly during a four-month stay in South Africa.

The young physicist also speaks French, and can read German, Dutch, and "scientific" Italian.

Brothers Pool Their Spare Time As Racing Hobby Pays For Itself

An all-brother team, who have spent all their spare time for years working on their racing cars, are making their hobby pay for itself.

Their current entry, a strange-looking vehicle built around a 1923 Model T Ford roadster body, won the most main events in San Diego Modified Sportsmen racing last year and is leading the field this season.

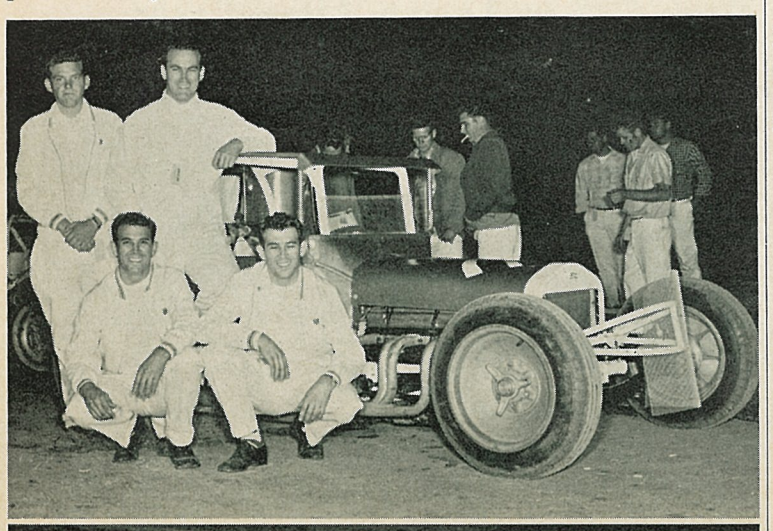
David and Donald Peat, twins, and their older brother, Wallace, were first racing devotees to use the Model T body, first for jalopy racing and, since 1958, for modified sportsmen events. (David is in General Dynamics/Convair Dept. 192; his twin, Donald in GD/Astro's Dept. 220. Wallace is employed at Ryan Aeronautical Co.)

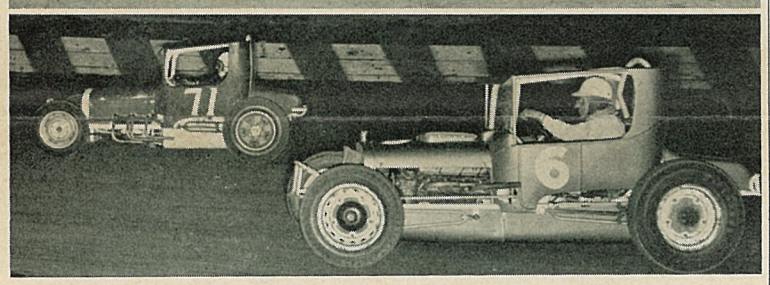
Their pitman, Pat Richardson, makes it almost an all-General Dynamics crew. He's in Dept. 250 at GD/Convair Plant 2.

They've hand-built four cars since they started in 1952. Their present entry took about four months to put together in 1959 and has cost in the neighborhood of $5,000. "Though, with its top racing record, it's been in the money enough to pay for itself!" said Dave.

It broke the speed record on the quarter-mile track at Cajon Speedway this summer, circling the oval in 17.13 seconds, with their driver, Don Edmunds of Los Angeles, at the wheel. Edmunds was named "Rookie of the Year" at Indianapolis four years ago.

The custom-made chassis is of chrome tubing, the engine, a 1960 Chevrolet. The T shell was salvaged from a wrecking company; aluminum hood, fire wall, and gas tank, from scrapyards. Biggest expense was the magnesium racing wheels with Indianapolis spot brakes and Firestone racing tires. Complying with Modified Sportsmen racing regulations its top is braced with steel roll bars and it is equipped with safety belts and shoulder straps for the driver.





WHAT IS IT?—In lower shot, strange vehicle at left (No. 71) is hand-built modified sportsman racer of Peat brothers sparked by 1960 engine under 1923 Model T hood. Above, are (kneeling) twins, Dave and Don Peat; (standing) Pat Richardson and Wallace Peat.

General Dynamics Men to Speak At Coming Management Institute

Four General Dynamics men will be on the roster of speakers listed for the coming Middle Management Institute in San Diego.

D. C. Wilkens Jr., General Dynamics/Convair manager of industrial relations; R. H. Nall, GD/Convair educational services supervisor; R. A. Ezekiel, GD/Astronautics management development specialist, and Donald D. White, administrator of PACE program at GD/Astronautics, will take part in the Institute.

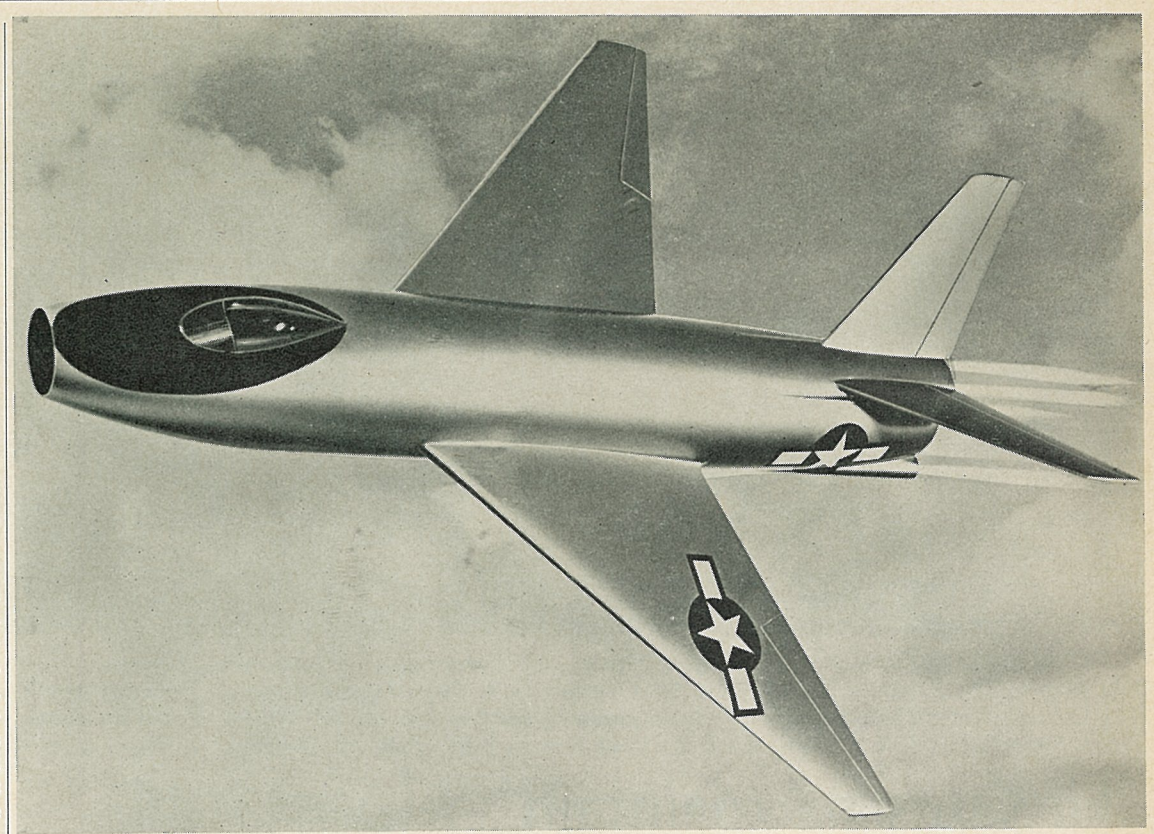
Selected management personnel from General Dynamics divisions in the San Diego area will be registered in the advanced training lecture series.

Sessions will be Fridays and Saturdays on five alternate weekends, beginning Oct. 20 and ending Dec. 16, at Mission Valley Inn.

The Institute is sponsored yearly by UCLA's Institute of Industrial Relations and Graduate School of Business Administration, University of California Extension in cooperation with San Diego Chapter of American Society of Training Directors.



CLUB LEADERS—Representatives of four General Dynamics division Management Clubs met in San Diego recently. From left: G. D. Lombard of GD/Pomona; Dick Craig of Corporate Office; John Watson of GD/Fort Worth; R. W. Dill of GD/Convair; W. E. Magnuson of GD/Astro; T. R. Worthy of GD/Pomona; E. G. Henderson of GD/Fort Worth; and J. V. Kappler of NMA.



GREAT GRANDPAW—A forerunner of F-102 was swept-wing, V-tail, rocket-and-ramjet-powered XP-92 which won 1946 interceptor competition, but was never built. Disappointment with wing's characteristics led to experimentation with delta platform.

Disappointment

Wind Tunnel Tests Ruled Out XP-92, Though it Won Contest

(Installment No. 68 in a continuing history of General Dynamics products deals with early engineering development of designs which ultimately resulted in famous delta wing, used for F-102, F-106 and B-58.)

The original XP-92 configuration used a wing swept back at 35 degrees. Two so-called "desk models" were built and shipped from Vultee Field to Wright Field when entries in the design competition were judged in May, 1946. Afterward, one was mounted in Vultee Field's four-foot wind tunnel to obtain rough data.

Results were immediately disappointing. "Tuft tests indicate that a tip stall starts at a five-degree angle of attack," an early report showed. Lateral control difficulties were found, too. Engineers suspected an entirely new platform would be needed to meet performance requirements. On July 5 this historic notation appeared in the reports: "A 60-degree delta wing will be investigated this week."

The triangular-wing concept was not new. Pre-war studies by NACA had showed the theoretical high-speed advantages of various wing shapes having extremely low aspect ratios. Power plants for such did not exist. During the war a brilliant German designer, Dr. Alexander Lippisch (father of the Me-163 rocket interceptor) experimented with the delta platform. He built an unsuccessful delta glider (brought later to the U. S. and tested by the Air Force) and conceived the Jager P-13A. This design combined the triangular wing with ramjet power for a theoretical top speed of 1,500 mph. The plane was not built but the designs fell into Russian hands. (If used they showed what other post-war research has demonstrated, that the Lippisch wing was much too thick to have supersonic capabilities.)

At Downey, Calif., Adolph Burstein, chief of design, was first to advocate giving the delta wing a try. Fillets shaped to fill internal angles behind the swept-wings created a delta of sorts. Tunnel performance was recorded July 12 as "the best to date." Learning that Lippisch was at Wright-Patterson AFB, Ralph H. Schick, chief of aerodynamics, arranged a conference at Dayton late in July. He returned convinced that the Convair design group was on the right track. Intensive investigation followed on alternate platforms, with leading edge sweepbacks ranging from 45 to 70 degrees.

One of the outstanding advantages of the triangular wing appeared to be relatively low drag in the transonic region. Airfoils showed a sharp drag rise starting about Mach .9 and reaching a peak just above Mach 1, then tapering off as the "drag hump" was left behind. Vultee Field studies prepared for the Air Force in November indicated a peak drag coefficient of only .048 for a 60-degree delta, compared with .072 for a 45-degree swept wing of equal area.

These and later studies also proved the delta to be exceptionally stable in thin air, and to have good low-speed handling qualities, due in part to the absence of a distinct stall point. Additionally, it was realized that the triangular shape was inherently strong, permitting the structure to be at once thin and rigid; and that the delta's area (larger than that of a comparable straight or swept wing) implied greater internal volume for fuel.

Rosenbaum Keynoter Of Training Society Western Conference

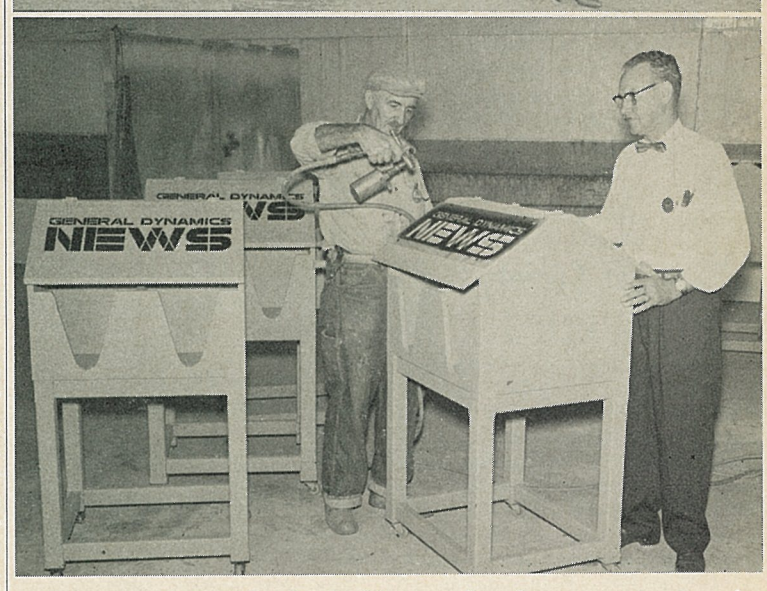
General Dynamics educational services staffs in the San Diego area will take part in the coming Tenth Western Regional Conference of American Society of Training Directors, Oct. 4-6.

Program chairman of the conference which opens next Wednesday at the Catamaran Hotel on Mission Bay is R. H. Nall, General Dynamics/Convair educational services supervisor. Host group is the society's San Diego chapter.

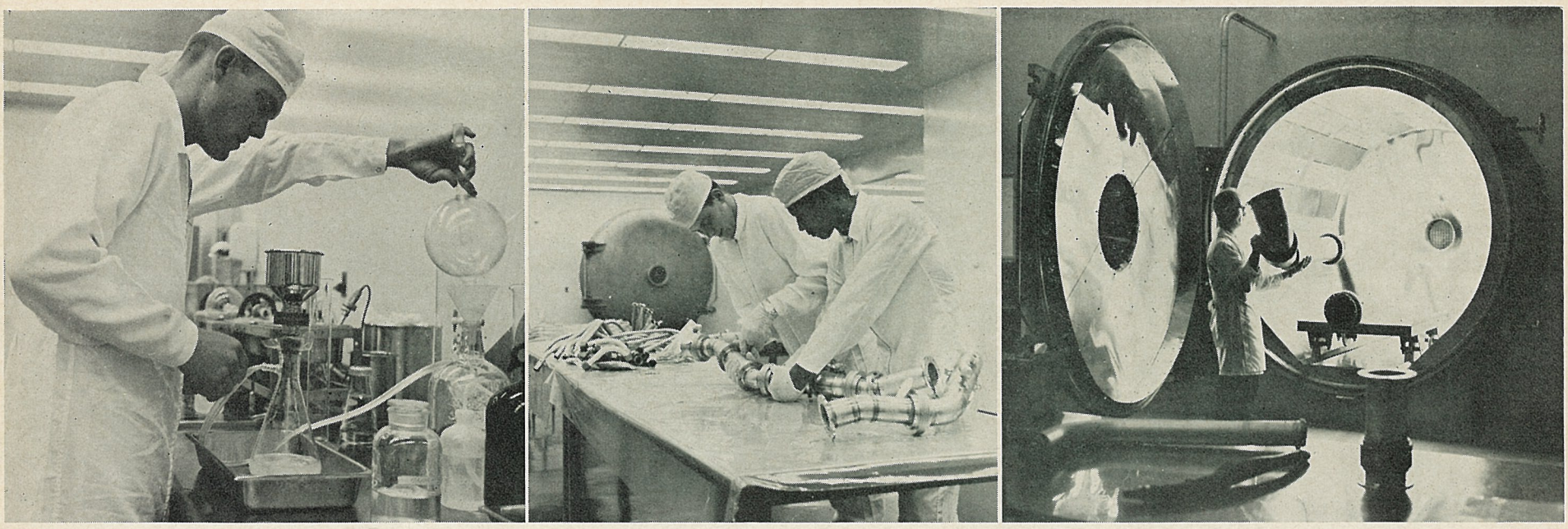
Keynote speaker at the opening morning session will be Mort Rosenbaum, executive vice president of General Dynamics/Astronautics. J. L. Budros, General Dynamics director of personnel administration, will be luncheon speaker on the same day.

B. P. Schroeder of General Dynamics/Pomona educational services will be a panel member at one of the conference sessions.





CHANGING TIMES—Sept. 13 saw first issue on street under new name "General Dynamics NEWS." At top was scene at Overpass No. 1, San Diego. Below, John Bender, Dept. 25, GD/Convair, changes name on boxes. With him is E. B. McMahon, assistant foreman.



SUTURE! SCALPEL!—In "hospital surgery" setting, GD/Astro personnel take care that Atlas missile parts are cleaner than clean. At left, D. A. Voss, foreground, and Jay Gunsauls (obscured) maintain check on cleaning solutions. In center, John J. Tracy, inspector, and W. I. Lewis check out ducts prior to packaging. At right, R. I. Franczak holds duct signifying entry into vacuum furnace, following degreasing, rinsing and sonic cleaning. Furnace heaters normally are off when door is open, but exception was made to illuminate oven for photo. Duct will pass through oven, out door at opposite end, into precision cleaning room.

'Air Curtains' Maintain Clean Room Efficiency

Another step to insure that parts for the Atlas missile are "cleaner than clean" was taken recently when operations began in General Dynamics/Astronautics' new 8,800-square-foot clean room facility at San Diego.

The facility, some 4,500 square feet of which is under environmental control, is located just inside the high bay area of Bldg. 5.

A unique feature for passing parts in and out of environmentallly controlled areas is the clean room's "air curtains." These consist of a screen of air blown horizontally across wall openings and drawn into intake gratings. The moving air serves to prevent contamination from passing between the two areas, yet permits easy movement of parts.

First stop for parts entering the facility is the pre-cleaning area at its eastern end. Here a one-ton bridge crane transports them during degreasing and rinsing in three large tanks. GD/Astro's large sonic cleaning units are also used in this area.

A vacuum oven dries parts as they move into the environmentally controlled area for precision cleaning, flushing and final sealing.

Cleaning operations are conducted by personnel from GD/Astro's Dept. 733 with M. M. Goodhart, general foreman; Jack Ridley and John Villian, foremen; and Robert Reeves and S. Serrona, assistant foremen, in charge.

Constant checks of cleaning effectiveness, and clean room environment are maintained by personnel of process control (Dept. 141-2) who staff a complete laboratory within the area. In charge of this function are G. H. Schwab, supervisor, and James Butler, process engineer. Also keeping close watch on the operation's effectiveness is an inspection (Dept. 143-6) team headed by Ed Bourgeois, supervisor, and Charles Payne, assistant supervisor.

Employee Services Post Goes to Sears

Keith Sears, 15-year Convair veteran with more than 10 years' experience in employee services operations, has joined General Dynamics/Astronautics to fill a new post as employee services supervisor.

Reporting to J. R. Mitchell, chief of employee services, Sears will assist in administering all employee services activities at Astro.

A native of Salt Lake City, Sears has lived in San Diego for more than 20 years. He attended Balboa Law School (Cal Western).

Sears has long been active in church, welfare and youth activities in San Diego. At GD/Convair, where he has worked for the last 15 years, he was CRA commissioner of astronomy.

Benefit Cards Set For Oct. 20

Astro Wives' Auxiliary will hold its annual benefit card party in GD/Astronautics cafeteria Oct. 20, with all proceeds to support a Christmas party for needy children.

Bridge, canasta and pinochle tables will be set up, with play to begin at 8 p.m. Table and door prizes will be awarded, and refreshments served.

All employees, dependents and guests have been urged to organize in "tables" of four players. Reservations and tickets at $1 each are available at all employee services outlets.

Additional information on this event is available from Mrs. Carl Priest, BR-7-2309, or Mrs. John Horning, BR-7-4104.

Estimating Society Will Meet Oct. 3

The San Diego Industrial Estimating Society headed by GD/Astro's L. H. Boggess will meet Oct. 3 at the Town and Country Hotel. A 5:30 p.m. social hour will precede dinner at 6:30 p.m.

Featured speaker is D. E. Pederson, Rohr Aircraft Co. manufacturing manager, and a booklet, "Cost-Quantity Relationship in the Airframe Industry," will be distributed to members.

Tickets at $2.75 per person will be available at the door. Boggess will give details on ext. 1331.

Fishermen to Make Own Rods and Flies

Two major projects on tap for ARA Fishing Club during the coming season will be discussed at the group's meeting at 7:30 p.m., Oct. 2 in ARA Clubhouse.

First is a series of "do it yourself" nights in the club's workshop in the ARA Clubhouse, when members will make their own fishing rods, flies and sinkers using club equipment.

Simultaneously, Fishing Club will join with Astro Modelers in construction of a combination casting pool and model boat basin in the ARA Area.

Club members have been reminded that marlin tackle is now available for rental through the club.

GD/Astro to Revise Mail Guide Section

A revised General Dynamics/Astronautics Mail Guide section for inclusion in the division telephone directory is being printed and will be distributed in early October.

The new section lists departments in numerical order, with key personnel, telephone numbers and proper mail zones, reflecting up-to-date changes in titles and department numbers.

Sheet Metal Winner Again

A perfect record won General Dynamics/Astronautics August safety and housekeeping contest for sheet metal (Dept. 732). It was sheet metal's second consecutive win.

Tool and die (Dept. 452) and machine shop (Dept. 731) also completed the month with no violations of good housekeeping, material handling, or fire and accident practices.

Safety awards were also earned by electronics research and development (Dept. 782), major assembly (Dept. 758), tool service (Dept. 460), manufacturing control (Dept. 220), engineering test (Dept. 756), production electronics (Dept. 781), mockup and plastics (Dept. 453-454), processing (Dept. 733), stores and traffic (Dept. 833) and test labs (Dept. 560).

Flag Football Leagues Begin

Pre-season play in the newly organized ARA flag football leagues began this week with 18 departmental teams taking part.

Two seven-team leagues for first-shift employees have been organized and include teams representing GD/Astro's Sycamore Canyon facility and GD/Convair.

These leagues will play on city park and recreation facilities on Monday and Thursday evenings, with games scheduled for 6:30 and 8 p.m. both nights.

A four-team second shift league is slated to play on Saturdays.

Practice sessions continue through this week, with regular season play to open Oct. 2.

ARA KEGLERS SET FAST LEAGUE PACE

An all-Astronautics bowling team, representing ARA in the 875 Sunday Traveling League, set some pretty high marks for others to shoot at in opening games Sept. 10.

Rolling against GD/Convair, the team turned in a 2,992-pin team series. Ed Frankowski took over individual lead with a 266 game and a 674 series.

Participants and their scores included: Hank Brenner, 185-213-167—565; Bill Geopfarth, 193-182-238—613; George Peck, 212-185-233—630; Bod Bodwell, 147-184-179—510; and Frankowski, 214-194-266—674.

Mort Sahl Tickets On Sale at Astro

Reduced price tickets to Circle Arts Theatre's fall season opener, "An Evening with Mort Sahl," are now on sale at all General Dynamics/Astronautics employee services outlets.

Tickets to the 6 p.m. performance, Saturday, Oct. 7, are available to employees for $3.40, $3 and $2.60, a 20 per cent saving over regular rates.

Value Engineering Experience Pays Off in Lower Atlas Costs

There are no coat hangers on an Atlas missile, but a General Dynamics/Astronautics group is using this common household accessory to prove a point.

In a display just outside Bldg. 4 library at San Diego three hangers ranging from a simple 3-cent wire type to a contoured wooden model costing 30 cents, illustrate the aims of GD/Astro's Value Engineering Seminar program by raising a question. Is a 30-cent hanger really needed, or can the job be done effectively with the 3-cent variety?

The seminar series, now in its second year, emphasizes reduced production costs through sound design practice. Over two-week periods, four-man teams from seminar groups of 12 to 16 key employees from various departments work on selected projects. Their goal is dollar savings through more efficient use of hardware or improved procedures

Earlier this year, for example. one seminar team concentrated on a missile part known as a "mount and cover assembly." This item cost $187.46 and was a complex assembly of bent brackets, machined parts, and rivets.

"This part is needed simply to hold another unit in place, permit its easy installation and removal, and to provide accessibility," the team reasoned. Result of their study was a simplified angle bracket which did these jobs for a cost of only $12.40.

Other team projects during the year have touched subjects ranging from flight articles and manufacturing methods to test procedures, with indicated potential savings of 20 to 93 per cent.

Biggest value of the program, however, is to individual seminar participants who bring a new kind of value-conscious thinking back to their regular jobs.

One seminar graduate tells of being questioned on his purchase of three electronic items for use on an engineering project, when a single precision unit was available. Prompted by value engineering experience, he replied that cost of the precision device was five times that of the three less exotic items, yet for his purposes performed no better.

"All seminar participants are highly qualified in their particular fields," said Everett Lindem, one of three value engineering seminar instructors. "The 'brainstorming' they get here helps GD/Astro give its customers more for their money."

Seminars are coordinated by GD/Astronautics educational services section of industrial relations. Dick Pferdner (Dept. 530-0), Lindem and George Pavlovich (Dept. 130-3) conduct the sessions.

RINKER TO SPEAK AT N.Y. CONVENTION

Kenneth K. Rinker, ARA commissioner of Astro Lens, is one of a select group of national photographic figures selected to speak at the 28th National Photographic Society of America Convention and Photo Festival.

The affair begins today (Sept. 27) and runs through Saturday at Hotel Statler-Hilton, New York.

Rinker will speak on "Multiple Exposures in 35mm Color." He has also been selected to moderate a special discussion.

Commissioner of Astro Lens since their formation, Rinker is the only two-time president of the Southern California Association of Camera Clubs, a group of about 18 area camera organizations. He is now a director of that group.



VALUE STUDENTS—G. T. Herring, left, and Deane Davis, right, compare present and suggested design for electronic package as Value Engineering Seminar graduate Lloyd Curtis, who proposed change, looks on. Proposal cuts package cost 63 per cent and weight by 67 per cent.



FAMILY AFFAIR—Enthusiasts of all ages take part in excavation operations of ARA Archaeology Club, at club's digging site overlooking Scripps Institution of Oceanography, La Jolla. Variety of artifacts have been recovered.—Photo by Randy Miller.

Sports & Recreation

Touring Weekenders Will Visit Big Bear Lake Area on Bus Trip

Mountain scenery and a host of recreational activities are in store for ARA-sponsored weekenders touring Big Bear Lake area Oct. 6-8.

Reservations for the tour, another in the popular series planned by ARA's Women's Activities Council, will be taken through Sept. 29 at all employee services outlets on a first-come, first-served basis.

Total trip cost of $22 per person includes bus transportation, two nights' lodging at Big Bear Lake's Wawona Lodge, and all meals except lunch on Saturday.

Plans call for chartered buses to leave Astro at 5:15 p.m., Friday, Oct. 6, and return about 8 p.m., Oct. 8. Using the lodge as "headquarters," participants will be free to indulge in swimming, ice skating, hiking, dancing, and a number of other activities. A bus will be retained at the lodge to provide transportation in the Big Bear area.

Additional information on the trip is available from ARA, ext. 1111.

Oct. 3 Deadline For Sq. Dancing

The final session at which GD/Astro employees and their dependents may join ARA Astro Nauts' beginning square dance classes will be held from 8 to 10 p.m., Oct. 3, at Jackson's Clubhouse, 4450 Alvarado Canyon Road.

The classes, opened to new members only twice each year, are held each Tuesday over a 16 to 20-week period and take students from basic walk-throughs of simple square dances through the most intricate steps.

Cost per session is 50 cents per person. Records will be used to accompany initial sessions, which are taught by Dottie and Van VanderWalker, veteran square dance instructors. Later in the series, guest callers and "live" music will be featured.

No advance registration is required for the classes, and students may enter the series by attending the Oct. 3 session.

Nippell Dominates Round-Robin Chess

For several months, a lunch-period chess tournament has been in progress within GD/Astro weights group (Dept. 597-5).

Winner of the round-robin meet, scoring 107.25 of a possible 116 points, was N. H. Nippell, followed by George Senogles with 71, and R. L. Kriz with 68.12.

Other contestants were K. F. Snow, N. L. Pippin, J. L. Stevens, A. U. Schultz, H. W. Fuqua, M. T. Giavelli, J. W. Gill, William Dove and G. W. Cole.

Nancy Tatum Wins With 1,136 Series

Nancy Tatum, GD/Astro Dept. 220-3, rolled a 1,136 series to win women's scratch honors in the recently completed Silver Dollar Jubilee bowling tournament. She pocketed $500 in prize money.

Nancy scored her win at Parkway Bowl, one of three alleys which sponsored the $31,999 meet. She is one of GD/Astro's top women keglers, having finished high in ARA-sponsored tourneys, and won class "B" laurels in last year's state championship meet.

Hunter Safety Course Slated

A new hunter safety course gets under way next week, in time for the quail and pheasant season.

Arnold Schrock is starting his seventh training course this year for young people of General Dynamics/Convair and General Dynamics/Astronautics families. Around 160 boys and girls, under 16, and half a dozen mothers have learned to handle shotguns and rifles since the first of the year.

According to California State law, the course is required before anyone under 16 years of age can get a hunting license.

Registration will be taken at the first Saturday morning class period (Oct. 7) at Gillespie Field Clubhouse at 9 a.m.

All wishing the training are asked to be there at that time, said Schrock. The course will continue for the two following Saturday mornings. Only charge is 50 cents each for brassard and ammunition.

Entries Solicited For Bowl Tourney

Application blanks for the fourth annual Astronautics Recreation Association bowling tournament set for Nov. 11-12 and 18-19 at Clairemont Bowl are now available.

Deadline for entering this handicapped event is Oct. 31.

Tony Minniti is tournament director this year with Barbara Mahaffey, tournament secretary, and Jack Boyle, tournament treasurer.

Application blanks are available at ARA office, Bldg. 8, all employee services outlets and Clairemont Bowl.

Fall Styles Preview Scheduled Oct. 18

Of special interest to ladies is San Diego Industrial Recreation Council's "Winter Wonderland," a preview showing of fall fashions from Walker-Scott Co., Oct. 18.

The show will begin at 8 p.m. in the Grove Room of the company's College Grove Center store. Door prizes and refreshments are included in the $1.25 admission price.

Tickets for the event are available at all employee services outlets.

Sports Rally Attracts 306

Astronautics Sports Car Club's third annual Photorama Rally held Sept. 17 drew 153 cars and 306 participants, Marion Carter, rally master, reported this week.

Some 35 club members "worked" the rally which is one of Astro's contributions to local sports car activities each year. Those not needed to administer the event were entered in a special class. Twenty-four guest trophies and 12 club trophies were presented.

Overall winner among guests was a team of Charles and Wanda Kenyan with a total error of .36 of a minute. Second went to Nancy Starr, an Astro daughter, and Peter Aperlo of GD/Convair with an error of .58.

In the "seat-of-the-pants" bracket, top guest honors went to Dick and Barbara Kangas—he's an Astro employee who entered with another club.

Mort and Phil Rosenbaum copped club honors in the navigational class with Bill and Nell Lester, second, and Earl and Peggy Potter, third. The "seat-of-the-pants" club awards went respectively to Jim and Mary Edmunds, E.S. and Phyllis Penick.

Hoop Season Starts Soon

Astronautics Recreation Association this week is preparing to launch its varsity basketball season soon by seeking both experienced players and a coach.

Archie Rambeau who has guided the top Astro team to one championship and a runner-up in the past two years has been transferred to Dyess AFB.

Sought is a coach who has had extensive high school or collegiate experience. Interested parties may contact Jim Doherty at ext. 3603.

Players experienced in top industrial, schoolboy or collegiate circles may contact Ray Mendoza of ARA at ext. 1111.

Regular season play opens about mid-October with Astro slated for a representative team in the highest local league.

Travelers Weekend At Lake Barrett

A mammoth outing in which 89 members of ARA's Astro Travelers' trailer club and their guests took part opened the month's activities.

Lake Barrett Trailer Park was the campsite for 22 trailers and pickup campers Labor Day weekend. Activities included swimming, hiking, dancing and games, with a potluck dinner Saturday and a barbecue on Sunday.

Club members are preparing for the Travel Trailer Club of America rally at Del Mar Fair Grounds, Sept. 28 through Oct. 1.

Salvage Yard Sked Established For Oct.

Salvage yard schedule for employee sales at General Dynamics/Convair and General Dynamics/Astronautics sites is:

GD/Convair—Sept. 30 and Oct. 14.

GD/Astro—Oct. 7 and 21.

$155 Charm Course Offered Astronautics Girls For $25

Characteristics of personal charm will be featured in self-improvement courses for women beginning the first week in October under sponsorship of ARA's Women's Activities Council.

Like previous classes, the popular courses will be taught by Sherry Miller, experienced instructor and professional model. Sessions in the nine-week series will be held Tuesdays from 5:15-7:15 p.m. for one group, and from 7:30-9:30 p.m. for a second. First meetings are Oct. 3.

Although usual cost of instruction of this type is $155 per person, under ARA auspices the price is only $25.

A separate series for teenagers will meet Mondays from 5:15-7:15 p.m. starting Oct. 2, if sufficient interest is shown. Like the adult course this will cover such subjects as coordination of wardrobe, make-up techniques, voice and diction.

Each class will serve up to 15 persons, with reservations now being taken on a first-come, first-served basis at all employee services outlets.

Rockhound Fees Cut to 25 Cents

Reduced workshop fees and a change in days of operation for ARA Rockhounds' workshop in ARA Clubhouse have been approved.

New rates are 25 cents per person per session, with the shop now open on Monday, Wednesday and Friday evenings.

Door prize at the recent meeting was won by Mrs. Caroline Woodyard and the attendance award by George Carter. Some 63 members and guests were present.

Entertainment included slides of the club's trip to Esmerelda Mine and picnic at Carlsbad, taken by Andy Drollinger. The movie "Nature's Half-Acre" was also shown.

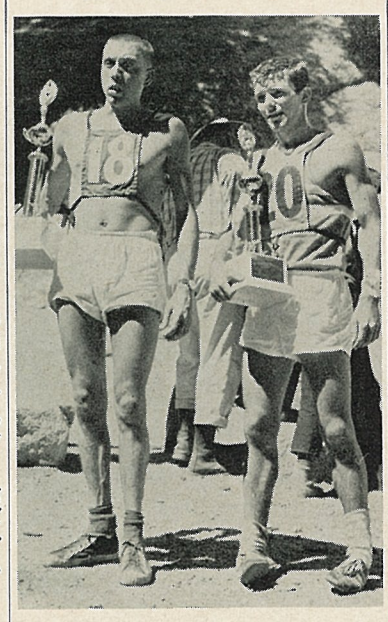
Engineer's Son Second in Run

Some people climb mountains. Others, like Mike Dragila, 20, son of Carl Dragila, research group engineer in GD/Astronautics Dept. 591-5, make the ascent at a "dead run" and win trophies doing it.

Mike captured second place in the Mt. Whitney Marathon Sept. 6, making the 21.2-mile run up the mountain in three hours, 58 minutes and 17 seconds. His average speed was almost 5.5 mph.

Both Mike and the first place winner, a 26-year-old Colorado Springs youth, bettered the former record of four hours, nine minutes.

Young Dragila is a physical education major in his junior year at San Diego State College. While at La Jolla High he won the city championship for the mile run, and was California Collegiate Athletic Association cross-country champion in 1960.



SUMMIT MEETING—GD/Astro son Mike Dragila, right, runner-up, and Colorado youth who won Mt. Whitney Marathon are shown with trophies at completion of 21.2-mile race. Mike's peculiar stance has logical cause: his feet hurt!

Show Features Unique Autos

Several General Dynamics/Convair people are heading arrangements for the 10-day Autorama, car show to be held Oct. 6-15 in Balboa Park's Electric Bldg.

Instrumental in bringing to San Diego over 100 unique cars and hot rods are three GD/Convair men, all members of the Asphalt Angels, local car club. Carl Caster of Dept. 48, as show manager, said that feature of the fifth annual showing of outstanding customized cars will be the two-wheel car of the future, "Gyron," coming from Ford Motor Co.'s Detroit, Mich., plant.

Assisting Caster are Tony Grato and Ron Rice, both of Dept. 145.

Also, numbered among contestants for Miss Autorama to be crowned at the opening night dance is Grace Delao of GD/Convair Dept. 142.

Discount tickets to the show are being handled through GD/Convair employee services.

Kierstead Speaker At Photo Meeting

Experiences of a missile-age photographer were described by Henry Kierstead, GD/Astro photographer, at a recent meeting of Astro Lens, ARA Camera Club.

Kierstead also served as judge for the club's monthly photo contest.

Astro Lens members have been asked to bring cameras and film to the group's next meeting, a workshop session slated for 7:30 p.m., Oct. 1, in the Photo Arts Bldg., Balboa Park.

ENTRIES SOUGHT FOR GOLF SWEEPS

Registrations for ARA Golf Club's October sweepstakes to be played at Coronado, Oct. 7 and 8, are now being accepted at ARA headquarters, Bldg. 8. Entry deadline is Oct. 5.

ARA Calendar

(GD/Astronautics Recreation Association has some 40 activities in operation for employees. For information, call ARA Headquarters, ext. 1111.)

★ ★ ★

ARCHAEOLOGY — Meeting 7:30 p.m. tonight (Sept. 27) in ARA Clubhouse. Ruth Simpson, Southwest Museum, Los Angeles, guest speaker.

ASTRO DIVERS—Meeting 7:30 p.m., Oct. 3, ARA Clubhouse. Lobster dive delayed until Oct. 8, with boat leaving 9 a.m., Seaforth Landing, Mission Bay.

ASTRO LENS—Workshop session 7:30 p.m., Oct. 1, Photo Arts Bldg., Balboa Park. Bring camera and film.

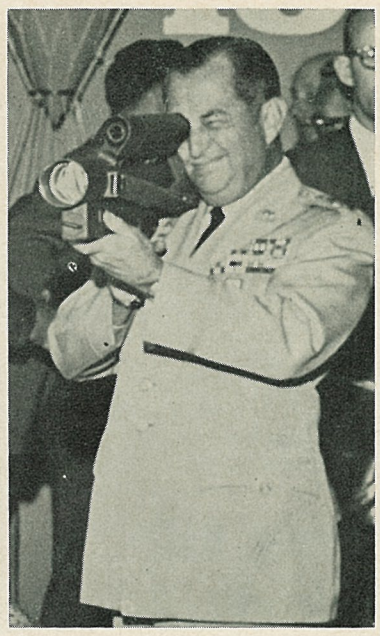
BASKETBALL — Experienced players, coach, sought for ARA varsity team. Contact Jim Doherty, ext. 3603, or Ray Mendoza, ext. 1111.

BOWLING — ARA handicap tournament at Clairemont Bowl, Nov. 11-12, 18-19. Applications at ARA Headquarters.

WIVES' AUXILIARY — Meeting Oct. 18 at Ye Golden Lion Inn. Social hour 11:30 a.m., luncheon at 12:30 p.m. Guest speaker Mary Tredwell will lead discussion on hats, accessories. Reservations with Mrs. Jack Harper, BR-3-4463.

WOMEN'S ACTIVITIES—Big Bear tour Oct. 6-8. $22 per person. For information and reservations, call ext. 1111 before Sept. 29.





ON TARGET—In photo at left above, Secretary of Army Elvis Stahr tries Redeye simulator during recent Association of U. S. Army meeting in Washington, D.C., with E. J. (Ted) LeFevre, left, now General Dynamics assistant vice president and general manager of Washington Office, and Vince Johnson, GD/Pomona Redeye project office. In photo at far right Gen. Clark L. Ruffner, U. S. Military Representative at NATO, tries his hand.

U.S. Jet Ace Checked Out In Hustler at Mach 2

America's first—and top—jet ace was "tremendously impressed" with his recent checkout ride in a B-58 Hustler.

"The Hustler's performance was outstanding," said Col. James Jabara, who for a time put a B-58 bomber through Mach 2 paces. It was his first time at the stick of a four-engine airplane.

Colonel Jabara recently volunteered for B-58 duty and is now enrolled in 43rd Bomb Wing's Combat Crew Training School.

The crack fighter pilot of two wars said the Hustler appeared to be a "fine weapon system" which could very likely maneuver with many fighter planes.

He is eminently qualified to draw a comparison, for it was in fighters of different eras — the P-51 Mustang of World War II and the F-86 Saber Jet of the Korean conflict—that he registered 18½ enemy planes destroyed.

He became this country's first jet ace when he blasted 15 Russian-built MIG-15s out of Korean skies on two separate tours in 1951 and 1953. Thus he became—and remains—America's top jet ace.

He noted that kills were far more difficult to come by in jets (600 mph) than prop-driven planes.

"And the speed of today's supersonic fighters would make aerial combat even more difficult," said the colonel, who recently flew F-104s.

Other first-impressions from flying a four-engine bomber: "More individual discipline and know-how on the pilot's part."



SMOOTH—Col. James Jabara, America's top jet ace who recently joined 43rd Bomb Wing, recounts first ride in B-58 Hustler to Col. J. A. Hutchison.

Redeye-Mauler Display Viewed By Thousands

An estimated 3,000 persons visited the General Dynamics/Pomona Redeye-Mauler display early this month at the annual meeting of the Association of the U. S. Army in Washington, D. C.

The display featured a Redeye "shooting gallery" and shadow boxes featuring pictures of Redeye and Mauler missiles. In the "shooting gallery," visitors were permitted to shoulder a Redeye missile launcher and simulate firings against a model helicopter target. Proper operation of the launcher resulted in launch sound effects and simulated destruction of the target.

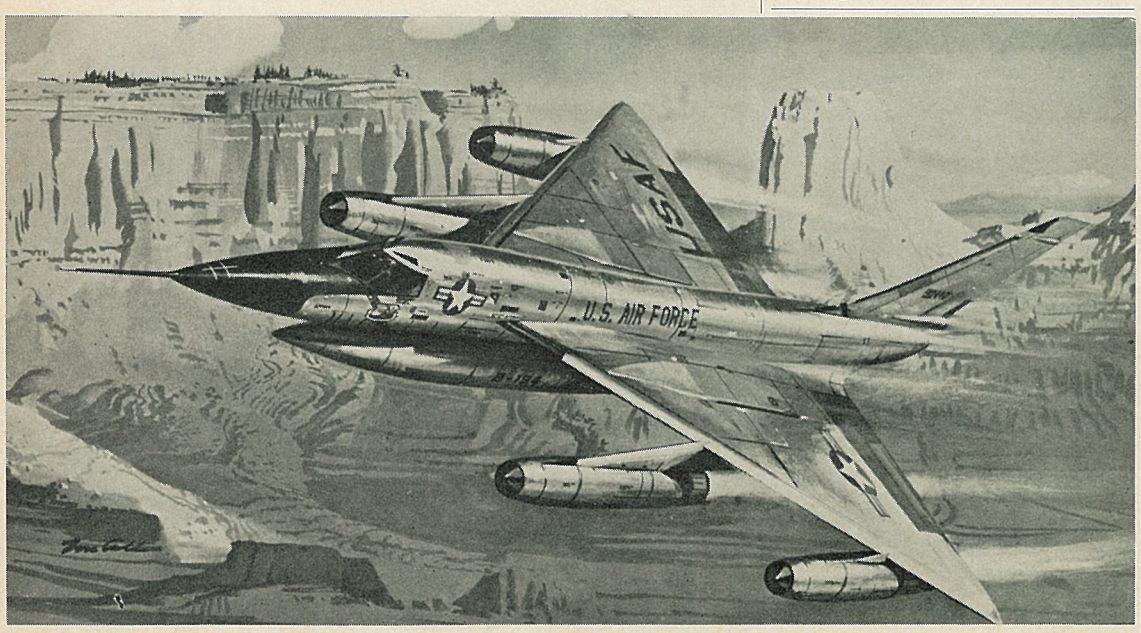
Among high-ranking visitors who operated the Redeye simulator were: Secretary of the Army Elvis Stahr; Gen. Clark L. Ruffner, USA, U. S. military representative to NATO Standing Group; Gen. Bruce C. Clarke, USA, commander in chief of the U. S. Army in Europe; and many other representatives of the U. S. Army and foreign military establishments.

G. I. Siegel of customer requirements plans and programs was responsible for the unique design and concept of the display booth. V. W. Johnson, of Redeye project office, was responsible for the electronic packaging for the "shooting gallery." The booth was manned by Johnson, Siegel, and D. O. Campbell of General Dynamics/Pomona.

Troop Carrier Wing Seeking Reservists

An invitation to Air Force Reserve members to join the 452nd Troop Carrier Wing at March AFB, Riverside, has been extended by the squadron flight commander, Major G. D. Hoffman, GD/Astro Dept. 521-1.

The pay-status reserve unit has openings for both officer and enlisted personnel. Call ext. 3216.



LOW-LEVEL—Artist's conception shows Mach 2 Hustler on low-level mission. B-58 can fly up to Mach .9 at altitudes of less than 500 feet, making it difficult, if not impossible, to detect by radar and equally difficult to intercept.

Nine Squadrons Groom Convair Deltas as 'Trial By Combat' Approaches

Nine Air Force squadrons flying Convair-built jet interceptors will enter teams in the 1961 USAF Worldwide Weapons Meet (William Tell) at Tyndall Air Force Base in Florida next month, Oct. 23 to Nov. 3.

Matching weapon firing capability in a normal air defense environment will be four F-106 teams; five F-102; and four F-101.

Teams flying F-106s will represent 539th Fighter-Interceptor Squadron, McGuire AFB, N. J.; 11th FIS, Duluth, Minn.; 498th FIS, Geiger AFB, Wash.; and 456th FIS, Castle AFB, Calif.

F-102s will go from 331st FIS, Webb AFB, Texas; 59th FIS, Goose Bay, Labrador; 317th FIS, Elmendorf AFB, Alaska; 182nd Air National Guard squadron, Kelly AFB, Texas; and 3555th Combat Crew Training Wing, Air Training Command, Perrin AFB, Texas.

No squadrons based outside of the United States with USAF in Europe or Pacific Air Command will be entered in this year's competition.

Jet interceptors, all of the Century series, will demonstrate effectiveness of their weapon systems against Q2C drone targets launched either in the air or from the ground. F-102 teams will compete in a manual control environment using voice communication; F-106 teams will go through maneuvers in SAGE (Semi-Automatic Ground Environment) with data link communications.

F-102s are equipped with GAR-1D missiles; F-106s with MB-1T and GAR-4 missiles.

Recognition will be given top aircrew - controller - maintenance teams.

Coordinating General Dynamics/Convair's participation is H. J. Richardson of military requirements, named GD/Convair project officer by J. H. Famme, division general manager. Hosting the 1961 Weapons Meet is the Air Defense Command.



GET SET—Among AF teams getting set for Weapons Meet in Florida next month are these members of 456th FIS at Castle AFB Calif. Above, from left: Lt. Col. James L. Price, 1st Lt. Everett E. Dencklau, Capt. William A. Curnuette, pilots; standing: Maj. Joseph A. Mentecki, materiel control officer, C. W. (Chuck) Stevens, GD/Convair rep, 1st Lt. Rex D. Howerton, pilot, 1st Lt. Christopher D. Pulos, A&E.

B-58 Over Water Pod Drop A Success Off Florida

A successful pod drop over water was made by Hustler No. 38 recently off the coast of Florida near Fort Walton.

Pilot Fred Voorhees made the supersonic drop of an upper component at an altitude of 35,000 feet at Mach 1.6.

"The sortie demonstrated successfully that the pod's aiming and fusing system will function properly on water impact," said Jim Graham, team captain.

Attempts by two Navy crash boats and a 105-foot Navy barge to locate the upper component after the drop were unsuccessful. However, telemetry data produced positive results.

Two distinct shock waves—one by the Hustler and the other by the pod—were created by the drop. "But everyone in the area had been briefed on what to expect," Graham said.

Jim Hayden, GD/Fort Worth photographer filmed the drop from an F-104 furnished by Air Force Special Weapons Center. Another FW photographer, Bill Williams, filmed the event from an F-106B from Tyndall AFB at Panama City, while Gene Hartsman took pictures from a helicopter.

Fred Hewes flew second station on the mission, and Ken Timpson occupied third station.

Graham lauded Team Captain B. L. Schultz and his crew for having the plane ready for flight "the day after Labor Day."

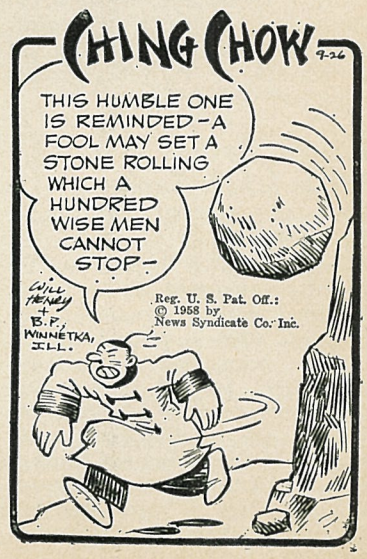
A low-level, upper-component drop over Test Area No. 75 at Eglin AFB was considered a "partial success."

The low-level run, aimed at confirming integrity of the pod system at sea-level conditions, was to be made again. Also upcoming is a low-level drop of the tank (lower component of the two-component pod).

All drops at Eglin are the first made at sea-level. For some months, Hustlers No. 4 and 38 have been used for both low and high-level pod drops over both the Tonopah Test Range and White Sands Missile Range.

CONSERVATION!

Not Conversation--



GD

ASTRONAUTICS EDITION
(OFF-SITE)

GENERAL DYNAMICS NEWS

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GD/Astro Products Featured This Week At New York Meet

The broad scope of General Dynamics/Astronautics research, achievements and capabilities are being demonstrated this week to scientific and military leaders from throughout the nation.

Upwards of 15,000 visitors to the American Rocket Society (ARS) convention in New York Coliseum, Oct. 9-15, are expected to view GD/Astronautics displays, study printed material, and actually take part in a space research problem.

In addition, GD/Astro scientists and engineers are featured prominently on the agenda of technical sessions which emphasize the convention's theme, "Space Flight Report to the Nation."

In GD/Astronautics' exhibit area on the Coliseum's second floor, visitors can view San Diego-developed electronic products including a solar tracker and GD/Astro's Azusa equipment. Tenth-scale models of Atlas-Mercury, Atlas-Centaur and Atlas-Agena are displayed along with a zero-gravity demonstration, and an exhibit featuring models of satellites currently in orbit.

Two GD/Astro exhibits permit visitor participation.

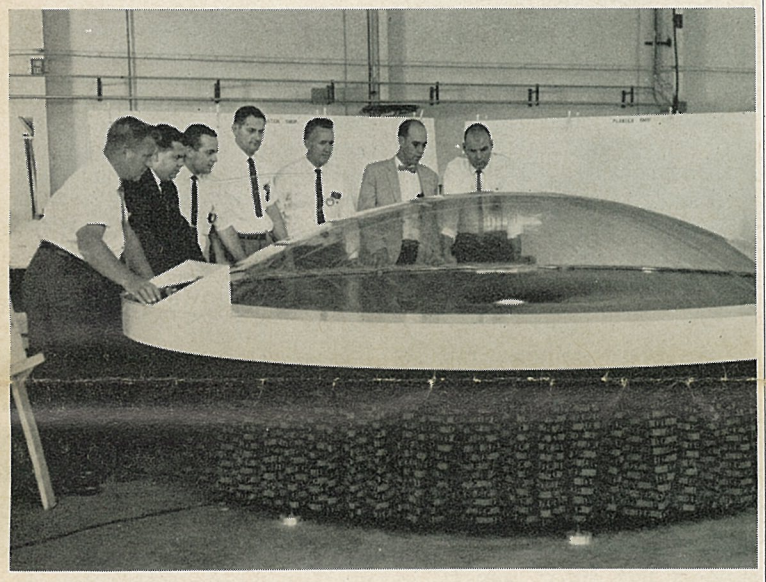
Intriguing and frustrating—to space-minded pin-ball players is one of these, known as a "gravity table."

A 10-foot diameter surface of

(Continued on Page 2)



PLANNING SESSION—W. H. Patterson, GD/Astro vice president-advanced product planning, discusses department organization with staff during orientation session held off-site recently.



SPACE GAME—Gravity table prepared for GD/Astro's exhibit for American Rocket Society convention in New York holds attention of some of many employees in many departments who played roles in its development and construction.

Daily Fire Drills to Emphasize Value of Prevention at Astro

General Dynamics/Astronautics employees, through the efforts of the fire department, are taking part in National Fire Prevention Week (Oct. 8-14) now in progress.

Astronautics' fire department has scheduled a full week of activities, tailored to emphasize that the vast majority of fires, both at work and at home, are caused by ignorance or carelessness.

Fire fighting demonstrations, utilizing modern equipment, will be presented daily this week at 9 and 11:40 a.m., 1:40 and 2:10 p.m. They will be held at various locations around the main plant, materials building, Fordham Bldg., Point Loma and Plant 2.

As long as supplies last, special packets of "hand-out" fire safety information will be distributed. These include information on home and work safety, current information on nuclear

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FULLY READY—Special equipment such as jeep-mounted portable nozzle shown here with one of GD/Astro's two "pumpers" during test is ready for use by fire department. Observance of National Fire Prevention Week (Oct. 8-14) stresses making plant fire-safe.

Club Boosters Named to Head Member Drive

General Dynamics/Astronautics Management Club today (Oct. 11) opens a one-month formal membership campaign, directed at introducing all eligible nonmembers to the broad range of club activities.

The search for new members is being handled through the club's "Booster" organization, with efforts coordinated by R. T. Bauman and D. K. Slingsby. Plans call for a "flyer" to be mailed to prospective members today.

All non-represented salaried employees and supervision are eligible for Management Club membership. Dues of $1.25 per month include the initiation fee, and subscriptions to Astro Leader, the GD/Astro club newspaper, and Manage, the National Management Association magazine.

"We feel Management Club membership has a great deal to offer the eligible employee," said Bauman. "He can form personal acquaintances at all levels of GD/Astronautics management; he is given a means for informal interchange of managerial concepts; and he can demonstrate his organizational ability through a variety of club activities."

Management Club Boosters throughout GD/Astronautics facilities can be recognized by a sign prominently displayed in their work areas. At Plant 71 and the support center, Boosters were briefed on goals of the membership campaign at meetings earlier this week, while a Booster meeting at Sycamore Canyon is slated tomorrow.

"All eligible GD/Astro employees are invited to investigate the advantages of Management Club membership by contacting the club Booster in their department," said Slingsby.

Brehm, Osborn Named To Patterson's Staff

Two major appointments within General Dynamics/Astronautics newly-organized advanced product planning (Dept. 105) have been announced by President J. R. Dempsey.

Reporting to W. H. Patterson, vice president-advanced product planning, they are W. K. Brehm, director of advanced product planning in the National Aeronautics and Space Administration (NASA) area, and Palmer Osborn, manager of marketing research and analysis.

They join J. J. Crowley and Bruce McKay, directors of advanced products for Air Force and current programs, respectively; J. W. Petre and J. S. Berggren, managers in these respective areas; and T. W. Wills, assistant to the vice president-advanced product planning, whose appointments were announced earlier.

Both Brehm and Osborn are veteran General Dynamics executives.

Brehm was formerly chief of operations analysis at GD/Astronautics, before assuming more recent duties as assistant to the vice president-planning, General Dynamics Corporation.

Osborn also joins GD/Astronautics from General Dynamics corporate office where, like Brehm, he was assistant to the vice president-planning. Before assuming those duties he held a post in operations analysis at GD/Convair.

Also named recently to advanced product planning posts are D. H. Digges, R. Stieler and J. R. Penland, all chiefs of management plans. Appointed chiefs of product planning are L. W. Gordy, M. H. Hansen, G. Lahey, and M. Redlinger. R. S. Korf has been named chief of sales planning.

Management Club Sets Hawaiian Dinner-Dance

A novel theme, casual or costume dress, and professional entertainment will be featured Oct. 28 when General Dynamics/Astronautics Management Club presents its "Hawaiian Halloween" dinner-dance at El Cortez Hotel.

Slated for the hotel's new Convention Hall, the dance is expected to attract the largest crowd in GD/Astro club's history. Some 1,200 persons can be accommodated.

A social hour begins at 7 p.m., with a luau-type buffet dinner served from 8 to 9:30 p.m. Dancing to music of Buster Carlson and his ARA band will continue from 9 until 1 a.m.

Intermission entertainment features a 45-minute floor show by a troupe of Polynesian dancers headlined by Tani Marsh. A $50 cash prize will be awarded the couple with the best costumes.

Tickets at $7 per couple are now available from all Management Club "Boosters." Controller and communication departments are sponsoring the event with John Spraker and Jim Mason heading the arrangements committee.

Jim Morgan and Don Clark of Astro at Warren Fight Ranch Fire Successfully With Buckets

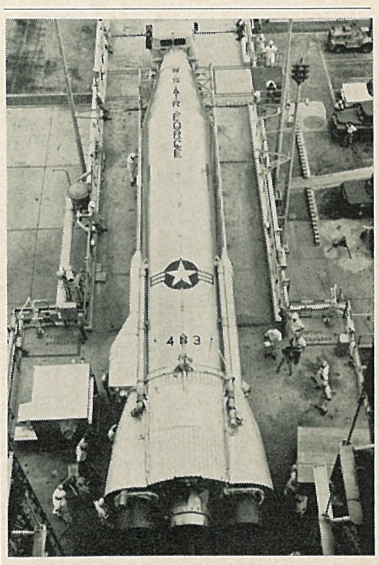
WARREN AFB — Two General Dynamics/Astronautics employees here recently found themselves playing unsuspected roles as volunteer fire fighters.

Jim Morgan, Dept. 537, and Don Clark, Dept. 322, were en route from Warren AFB to an outlying Atlas missile site when they spotted smoke rising from a building on the Three Bells Ranch.

They raced to the scene to find the owner's wife, Mrs. James Lawson, fighting a losing battle with a blaze which had razed one building and was spreading toward the house and other structures.

Carrying buckets of water from a well 100-feet distant, the GD/Astro men extinguished the building blaze, then turned to the grass fire with water-soaked burlap bags. All was under control when equipment from a volunteer fire department arrived at the ranch.

Clark and Morgan did a "double-take" at the sign on the fire engine door: it was from "Burns, Wyoming."



ON ARRIVAL—Atlas 25-E which last week (Oct. 2) was successfully launched on a 5,000-mile trip down Atlantic Missile Range, is shown upon arrival at Cape Canaveral Complex II.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Sept. 25.

Dept. 101, Data Processing: To data processing asst. supervisor, R. C. Bowes. To clerical asst. supervisor, A. W. Justus.

Dept. 124-0, Motion Pictures and Television: To asst. supervisor, H. I. Reavely.

Dept. 130, Industrial Relations: To professional and technical education supervisor, V. A. Martin. To guard chief, A. C. Gates.

Dept. 154-1, Resources Planning: To factory methods asst. supervisor, G. G. Preston.

Dept. 170-2, Office Services: To general supervisor, R. W. Kleinhans.

Dept. 220-3, Manufacturing Control: To manufacturing control foreman, C. E. Davis.

Dept. 322-8, Support Publications: To publications asst. supervisor, D. D. Clouse.

Dept. 324-1, Field and Service Engineering: To field engineering asst. supervisor, R. F. Schmidt.

Dept. 335-2, Service Parts: To support logistics asst. supervisor, C. E. Routh.

Dept. 337-3, Support Documentation: To parts documentation asst. supervisor, H. E. Vandenberg.

Dept. 343, Support Manufacturing Control: To GFE asst. supervisor, F. P. Burke. To manufacturing control asst. foreman, V. M. Garrison.

Dept. 344-2, Support Operations: To asst. foreman, W. M. Basile.

Dept. 350-3, Support Field Operations: To calibration analysis and control supervisor, G. W. Lucas. To support calibration group engineer, S. J. Rose.

Dept. 351, Field Modification: To field modification general supervisor, D. B. Sullivan. To asst. foreman, J. W. Arrington. To inspection supervisor, C. W. Derrick, F. B. Shockley. To support calibration group engineer, D. I. Harrison.

Dept. 480-0, Operations Planning and Methods: To factory methods supervisor, J. R. Couchois, W. F. Van Dusen.

Dept. 510-3, Engineering Department Management: To asst. project engineer, J. F. Carberry.

Design. 539, Design Liaison: To asst. design group engineer, F. F. Stanford, H. M. Williams.

Dept. 581-1, Advanced Systems: To asst. project engineer, W. F. Rector III.

Dept. 593-9, Reliability: To senior reliability group engineer, D. Krause.

Dept. 595-1, Development: To research group engineer, J. R. Transue.

Dept. 781-0, Electronics Manufacturing: To asst. foreman, D. A. George.

Dept. 814, Procurement: To purchasing agent, W. C. Buxton. To buying supervisor, E. L. Dierker.

Dept. 833-0, Stores and Traffic: To chief of stores and traffic, F. J. Parker.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch control supervisor, J. R. Gillilan. To production control asst. foreman—base, R. P. Miller. To head nurse, C. N. Wood. To asst. foreman, P. F. Black, S. G. Hughes, D. P. Neuenschwande.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To launch complex asst. supervisor, H. E. Stanley, F. M. Pannek. To activation engineering asst. supervisor—base, C. H. Steele. To sub-contract coordination asst. supervisor, R. Howland. To head nurse, R. R. Jones. To foreman, O. I. Jones. To asst. foreman, D. D. Arce, C. W. Maxfield.

FAIRCHILD AFB

Dept. 613, GD/Astronautics Operations: To activation engineering asst. supervisor—base, H. W. Burns.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To asst. foreman, W. J. Taylor, E. A. Beadleson, B. B. Beebe, J. E. Dulaney, J. C. Dunn, M. A. LaFrance, E. N. Martin, W. L. Mozingo, L. L. Phipps. To production planning asst. supervisor, G. M. Brower. To launch complex asst. supervisor, W. J. Hill Jr. To transportation asst. foreman, E. B. Kobza. To office services asst. supervisor, R. W. Kuenne.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To production control asst. foreman—base, E. I. Christensen. To inspection asst. supervisor, R. E. Larsson.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To asst. foreman, M. W. Freeman, E. E. Lawrence, W. C. Miller, L. C. Slaton. To activation engineering asst. supervisor—base, F. E. Scearce, W. B. Tagney.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To manufacturing control foreman, H. F. Massey. To production planning supervisor, J. M. Opocensky. To GFE asst. supervisor, C. A. Southard.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To inspection asst. supervisor, L. N. Trigg. To asst. foreman, J. G. Agnow, J. Todd.

Deaths

MAIN PLANT

HOWLAND—Warren Frank, Dept. 535-7. Died Oct. 1. Survived by wife, Margaret.

ALTUS AFB

MILLIGAN—George E., Dept. 617-7. Died Sept. 21. Survived by wife, Lavayne; daughter. Ann; son, Dan.

VANDENBERG AFB

ABNEY—Charles Toy, Dept. 576-3. Died Sept. 21. Survived by wife.

Service Emblems

MAIN PLANT

Service emblems due during the period Oct. 1 through Oct. 15.

Twenty-five-year: Dept. 220-4, D. F. Pearse; Dept. 290-2, K. G. Clarke; Dept. 731-0, W. T. Herchold.

Twenty-year: Dept. 604-0, G. M. Loudermilk; Dept. 606-0, D. E. B. Nuttall; Dept. 756-0, W. C. Cockerell, A. L. Kelso; Dept. 771-0, E. H. Hughes.

Fifteen-year: Dept. 184-0, C. C. Harper Jr.; Dept. 250-1, C. J. Lewis Jr.; Dept. 300-0, K. R. Aiken Sr.; Dept. 401-2, M. S. Brombach; Dept. 531-2, A. W. Koenig; Dept. 606-0, W. M. Wohlwend; Dept. 731-0, G. A. Vance.

Ten-year: Dept. 101-1, D. R. Brown; Dept. 120-7, E. M. Gooley; Dept. 130-6, J. A. Lakin; Dept. 250-3, R. E. Volle; Dept. 331-1, A. G. McCullough; Dept. 335-3, J. D. Gowin; Dept. 402-1, G. T. Freeman; Dept. 452-0, Joseph Pavlas; Dept. 535-5, D. L. Gray; Dept. 539-2, A. E. Munson; Dept. 551-3, W. D. Buniger; Dept. 576-6, J. P. Vawter; Dept. 707-1, E. J. Wolf; Dept. 831-0, Jeraldine A. Myers.

AFMTC

Ten-year: Dept. 571-0, K. E. Newton, J. N. Remissong.

DYESS AFB

Ten-year: Dept. 618-7, R. J. Finstad.

EDWARDS RS

Fifteen-year: Dept. 575-4, J. F. Ferguson.

Ten-year: Dept. 575-3, E. A. Peet.

FORBES AFB

Fifteen-year: Dept. 614, C. L. Parker Jr., O. C. Scott.

LINCOLN AFB

Twenty-year: Dept. 616-2, A. G. Eiland.

WALKER AFB

Ten-year: Dept. 619-7, H. F. Hall.

Births

MAIN PLANT

BEALS—Daughter, Cheryl Ann, 11 lbs., 1 oz., born Sept. 8 to Mr. and Mrs. B. A. Beals, Dept. 331.

LINCOLN AFB

VAKOC—Son, Rodney Dean, 7 lbs., 9 oz., born Aug. 25 to Mr. and Mrs. R. D. Vakoc, Dept. 616.

SCHILLING AFB

DEITZ—Daughter, Jana Kay, 6 lbs., 9 oz., born Sept. 26 to Mr. and Mrs. Rodney Deitz, Dept. 615-8.

MACY—Son, Charles R. Jr., 7 lbs., 15 oz., born Sept. 13 to Mr. and Mrs. Charles R. Macy, Dept. 615-9.

Fire Drills Held All Week

(Continued from Page 1)

fallout and tips on what to do in emergencies.

A continuous motion picture on fire safety will be shown during lunch periods at the fire station, Bldg. 6. Employees are invited to attend and also to see a special display.

Fire department and safety inspectors will make special checks in all plant areas throughout the week to focus attention on safety.

Astronautics also plans to play a major role in observance of the week outside the plant. Guest officials will view a demonstration of liquid oxygen and hydrogen peroxide conducted by Cyril Leigh-Smith of Astro educational services. Special plant tours will be conducted for the visitors.

Television, radio and newspaper coverage of Astronautics' part in the national observance will be featured locally and nationally.

National Fire Prevention Week is being observed in conjunction with the anniversary of the great Chicago fire of 1871 which caused damage of $168 million.

Every six weeks an estimated $168 million loss is attributed to fire in the United States.

Every day fire destroys or damages an average of 1,525 homes, 105 industrial plants, 149 stores, 11 churches, 11 schools and four hospitals. Annual loss of life attributed to fires is 11,500.

"These facts again emphasize the constant need for greater attention to fire safety," said W. E. Bowman, manager of industrial security. "We hope our part in this observance will help employees realize the dangers and act accordingly."

General Dynamics NEWS

Successor to "Convairiety," West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

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Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.



QUARTER CENTURY—L. G. Granstedt, chief tool engineer, Dept. 400-00 (right), and Michael Brooks, Dept. 181-0, are latest GD/Astronautics men to receive 25-year service pins from Mort Rosenbaum, executive vice president at GD/Astro.

Astro Products In Limelight

(Continued from Page 1)

special plastic, precision-contoured with the assistance of electronic computers simulates the reach of space between a miniature plastic "earth" (in the table's center) and the "moon," orbiting with exact speed (at the perimeter).

Visitors are invited to "launch" a steel spherical "satellite" from earth at the proper time to hit the moon. The problem is complicated by conical depressions in the table surface, scientifically simulating gravity fields.

A second visitor-participation display is actually being used to collect data for GD/Astronautics human factors research.

This is a pair of mechanical devices serving as "robot psychologists." They measure the efficiency level of individuals operating them during problems testing reaction to continuous stimuli.

At a luncheon program tomorrow (Oct. 12), J. R. Dempsey, GD/Astronautics president, and a member of the ARS committee in charge of the convention, will serve as toastmaster. Principal speaker at this session is Lt. Gen. Bernard A. Schreiver of Air Force Systems Command.

Also taking part in the program is Krafft Ehricke, GD/Astro program director—Centaur, who joins a panel of other distinguished space flight experts for a space vehicle report.

A paper on "Thermal Control of Manned Space Vehicles" by Charles C. Love Jr., will be presented during a session on space hazards control, and Robert S. Shorey will discuss launch problems. J. H. Guill, B. Thompson and H. E. Radd will speak on "Solar Monitor—A Nuclear Rocket Mission," and Radd and I. J. Deane will discuss development programs, flight operations and facilities for nuclear rockets. Neil W. O'Rourke will speak on selection of upper stage propulsion systems for space vehicles.

Members of ARS Technical Committee include Eugene Lally (guidance and control); W. T. Radcliffe (liquid rockets), W. H. Dorrance (chairman, hypersonics), and C. E. Chapman (ram jets), all of GD/Astro.

Roy Sullivan Places In Go-Kart Racing

WALKER AFB—"Go-Kart" entries from two GD/Astro employees here competed in the Bottomless Lakes Endurance Grand Prix near Roswell, N. M.

The cart driven by Roy Sullivan (Dept. 619-3) placed 4th in its class, while that entered by Ken Pfeilsticker (Dept. 619-4) and driven by his son, Kenny, was eliminated early in the 96-mile endurance run after losing a tire.

Ryan Co. 'Flex-Wing' Topic at SAE Meet

San Diego Chapter, Society of Automotive Engineers, will meet at Midway Chuck Wagon, Oct. 17. Social hour begins at 6:30, with dinner at 7:30 p.m.

Speaker is H. C. Cotton, manager of advanced flight systems for Ryan Aeronautical Co., who will discuss that company's "Flex-Wing" design.

Plattsburgh Fans Watch Roger Maris

PLATTSBURGH AFB — Forty from General Dynamics/Astronautics operations here recently organized a group bus trip to Boston for a Red Sox-Yankee baseball game.

The trip was arranged by H. C. Hackett, T. C. Sullivan, E. W. Eckard and B. C. Noah.

Transparent Pipes Installed For Plumbing in Laboratories

Some 875 feet of glass piping—a complete drain system — now being installed at General Dynamics/Astronautics, is believed to be the first installation of its kind in the San Diego area.

Plant engineering (Dept. 250) is using the transparent glass pipe to replace the drain system for engineering test laboratories in GD/Astro's Bldg. 4.

Affected are chemical analysis, infrared spectrophotometry, vacuum fusion and fungus, and nondestructive test laboratories (all Dept. 563-1), and the plastics research lab (Dept. 592-1).

Previously, drain lines from these areas were of the usual cast-iron piping, which, over a period of time, were badly corroded by solutions.

In considering replacement, designers sought a plumbing material which would be unaffected by chemicals. The new "Pyrex" glass piping is corrosion-proof and no more expensive than conventional material. For added protection, an automatic flushing system each hour will pour fresh water through system. Pipes empty into a dilution sump before entering sewer lines.

In addition to plumbing replacement, the project includes work on lab floors, renewed floor coverings, and construction of concrete bases for counters. All work has been scheduled to disrupt lab routines as little as possible.

Key figures in planning the project include H. G. Comstock and H. C. Ballard, construction engineers; R. G. Grimshaw and D. E. Merriam, assistant supervisors, all Dept. 250-2.

Actual plumbing is being accomplished by Dept. 250-3 employees headed by Gene Schutz, assistant foreman.



"PICTURE-WINDOW"—T. W. Mears of GD/Astro, top, tightens connection on new glass plumbing while Frances Abolins, material test group, and H. G. Comstock, construction engineer, examine types of fittings.

'CONVAIR ASTRO' OUT; BUT STILL USEFUL

When General Dynamics/Astronautics gained full division status recently, a supply of standard legal-size (No. 10) envelopes printed with the former "Convair Astronautics" name became obsolete.

Now these envelopes will be reissued for use with mail between various GD/Astronautics operations (for example, between Plant 71 and base activation sites throughout the country), after a neat over-printing job by graphic reproduction (Dept. 123-0).

The old envelopes are now marked "Intra Division Mail Only," and will not be used for correspondence outside the division.

The envelopes are available from Group 31 Stores, where they are listed as material number 809035, part number "Envelope 1010-10."

Ehricke Helps Edit Space Flight Text

Krafft A. Ehricke, General Dynamics/Astronautics program director-Centaur, is a member of the editorial board which prepared a new space flight textbook just published.

Entitled "A Handbook of Astronautical Engineering," the book was a three-year project for 150 leading space authorities representing government agencies, industry and universities.

Pre-retirement Counseling Started For All Astro People Nearing 65

A comprehensive program of retirement planning for General Dynamics/Astronautics employees approaching age 65 has been announced by Keith A. Sears, employee services supervisor (Dept. 130-5).

The program, which offers individual and group planning sessions, begins approximately three years before the employee reaches retirement age.

It will cover such factors as income planning, medical problems, and personal adjustment to increased leisure time.

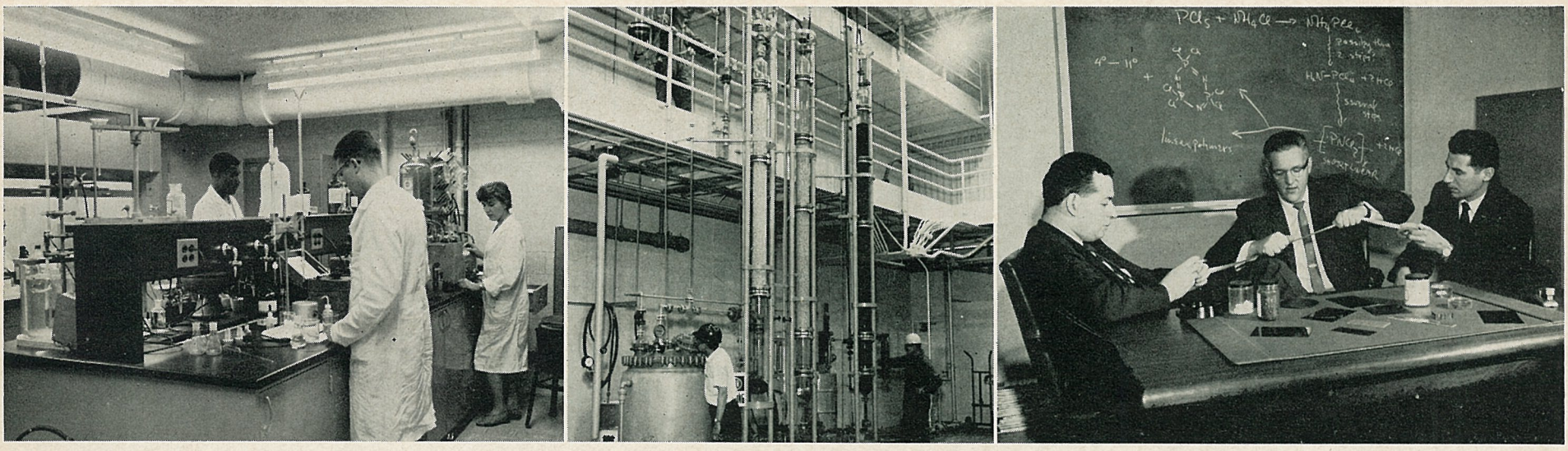
"A few months before reaching age 62, the employee will be contacted and asked to arrange an interview appointment with me," Sears explained. "I will meet with him personally twice or three times a year to discuss any problems he can anticipate, and offer any assistance possible."

Personal interviews will be interspersed with a series of group meetings at which experts in fields of social security, investments, and similar subjects will discuss their specialties.

Employees anticipating retirement in the near future may contact Sears at ext. 1111.



ANSWER MAN—In personal interviews with Keith Sears, employee services supervisor, employees are helped to evaluate approaching retirement realistically and are provided with information toward this end.



CHEMICALS CAPABILITY—New, modern pilot plant at San Diego seaplane ramp is home of Chemicals Section of General Dynamics Advanced Products Department, formerly known as "Project X." At left in analytical research and quality control area are Thurman Gillis, Roy Norman, Dusa Cvjetkovic. Center photo shows Don Oncale (on catwalk), Sergio Cabinum and Ray Kingman. At right are Dr. Lloyd Kaplan, chief of chemical research and development; Dr. Rip G. Rice, technical director of section; and Leo Zuckerman, chief of chemical engineering and production.

Market Development Stage Approaching For GD's 'Project X'

A hitherto unpublicized chemical research program, known for two years only as "Convair Project X" and now organized as the Chemicals Section of the Advanced Products Department of General Dynamics, has reached the market development stage.

The program has been kept "under wraps" for some 2½ years because this chemical discovery was capable of being patented and time was needed to protect GD's proprietary position and file the necessary patent applications both domestically and abroad.

Only recently grouped directly into GD's Advanced Products Department, the project was given a sharp spur forward earlier this year when most of the personnel were moved into a new and versatile chemical pilot plant located at the GD/Convair SD ramp.

The Chemicals Section was born when a chemical reaction was discovered by which a variety of resinous chemical intermediates could be developed having high-temperature properties up to 1,000 F.!

Says Dr. Rip G. Rice, who along with Robert L. Riley, was investigating chemistry dealing with the high-temperature materials at the time:

"As is the case with so many chemical discoveries, the reaction came about almost accidentally. A particular chemical raw material had been known for years, but was something of a laboratory curiosity. We discovered this interesting compound could be reacted to produce new chemicals with exceptional high-temperature properties."

Both of the co-discoverers are still in the GD family. Rice is technical director of the Chemicals Section of Advanced Products Department and Riley is continuing his work at the Scientific Research Laboratory.

"AP-Resin-XHU, formerly called Formula X, a light, powdery solid, is one of the intermediates developed from the chemical reaction," explains Dr. Rice. "It was a completely new discovery with commercially feasible applications."

In May of 1959, Rice and five associates moved into a special laboratory facility at 3462 Hancock St. in San Diego. By the end of the year they had developed a 20-gallon synthesis of AP-Resin-XHU.

Product development of AP-Resin-XHU with its high-temperature applications was pursued with the following results: as a solid it was made into coatings such as varnish; it was molded under high temperatures; it was impregnated on fiber reinforcements and made into laminates.

The chemical was blended with other high-temperature resins to make structural adhesives, electrical insulations and flexible and rigid foams.

Now in their new pilot plant at the SD ramp, Dr. Rice and his group (now numbering some 24 persons) will be able to produce enough of the resin to make marketing operations feasible.

Dr. Rice expects to have two products on the market by the end of the year in addition to AP-Resin-XHU.

One will be "DYNALAK HU" which is a high-temperature varnish, primarily intended as a dip-coating for electronic components, but which also has other minor applications.

Another product, now termed "Vartex T-1092," a class F electrical insulation tape, will be marketed by the New Jersey Wood Finishing Co., Woodbridge, N. J., for wrapping parts of electrical motors to protect against corrosion, provide insulation and cut through resistance while operating at high temperatures.

Timewise, AP-Resin-XHU has been moving rapidly through the research and development stages. In the chemical laboratory a rule of thumb is "seven years from test tube to tank car," a cycle which may be shortened considerably in the present instance.

Dr. Rice points out that the new pilot plant (1,500 sq. ft.) provides a link between information and production. In the versatile facility, GD chemists and chemical engineers will be able to perform almost any known chemical unit process on a pilot scale.

In addition to GD research and development, outside chemical contract tasks will be actively sought for the modern pilot plant and its personnel.

The Chemicals Section, under Dr. Rice, is divided into four functions. Dr. Lloyd Kaplan directs chemical research and development, which includes five chemists and two technicians; product research and development is staffed by two senior chemists and two technicians; chemical engineering and production under Leo Zuckerman includes two chemical engineers, a foreman and several chemical operators. A market development group is under the direction of Dr. Thomas F. Banigan.

In addition to the Chemicals Section, Advanced Products Department encompasses a Mechanical Section, formerly known as Dynapak. R. G. Monsees is general manager of the department.

Reservists on Duty In Northern Africa

Two General Dynamics / Fort Worth men have been assigned to Port Lyautey, Morocco, in North Africa on a 14-day training cruise for U. S. Naval Air Reserve Transport Squadron 703.

They are Harold P. Cowan, Dept. 6-7, and Ruben Ramirez, Dept. 21-7. The squadron's mission will be to airlift passengers, mail and cargo throughout northern Africa and southern France.

Two New Successes Scored by Atlas E

CAPE CANAVERAL — Air Force and GD/Astro crews have scored two new successes with recent Atlas "E" series launches over the Atlantic Missile Range.

On Oct. 2, Atlas 25-E completed a programed 4,000-mile flight from Complex 11 here, while Oct. 4 saw Atlas 30-E, launched from Complex 13 follow a 9,000-mile flight path ending "on target" in the Indian Ocean.

Gen. Keeling to Speak To AFPRO Management

Next meeting of GD/Astronautics Air Force Plant Representative's Office (AFPRO) Management Club will be held Oct. 24 at the Marine Corps Recruit Depot Officers' Club, San Diego.

Guest speaker will be Brig. Gen. Gerald F. Keeling, Western Contract Management Region commander, who will discuss management of the Atlas missile and space programs.

Karel J. Bossart, GD/Astronautics technical director, addressed the club's September meeting. At that time, Charles Dvoracek of the AFPRO site activation division received the club's "Man-of-the-Month" award.

GD/FW Men Go To Active Duty

Fifty-one General Dynamics/Fort Worth employees are members of the recently activated 49th Armored Division.

The division is due to report to Fort Polk, near Leesville, La. about Oct. 15.

Employees, by department number, are:

Dept. 3-5, Charles D. Curry; Dept. 4, J. W. Jordan, J. V. McDonald, W. H. Moore.

Dept. 6, J. L. Baker, O. G. Burton, H. W. Coppinger, C. D. Gaddy, F. L. Harrison, G. H. Hayward Jr., B. O. McCauley, J. B. McGoodwin, T. J. Osborne, C. G. Pearcy, Calvin Postoak, J. W. Powell, J. L. Shen, D. R. Shirley, G. W. Wilson.

Dept. 14, P. K. Dorsey; Dept. 19, R. J. Ballard, J. L. Baldridge, G. W. Volkman Jr.

Dept. 20, L. W. Herring; Dept. 21, B. R. Burnett; Dept. 22, M. E. Byars, D. L. Little, J. E. Williamson.

Dept. 24, J. L. Tillery; Dept. 27, E. E. Farmer; Dept. 32, H. J. Harner.

Dept. 35, G. L. Botkin, L. M. Browder, J. W. Doty, A. W. Hovis, L. R. Leach, W. H. Long, R. W. Trimble; Dept. 37, W. H. Sellers.

Dept. 64, C. M. Sheldon, R. K. Treu, B. V. Whitehead; Dept. 65, Thurman Cannon; Dept. 75, K. D. Chaney.

Dept. 81, B. T. Cantwell, E. H. Draper, Noel McNiel, T. L. Neely, C. M. Peters Jr.

Dept. 82, R. L. Jones Jr.; Dept. 85, B. E. Weatherby.

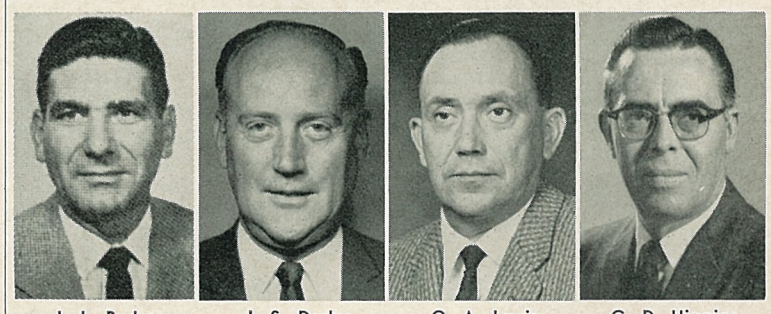
Erickson to Speak For IAS Section

B. A. Erickson, chief of projects, General Dynamics/Fort Worth, will speak Friday before the Texas Section, Institute of Aerospace Sciences, Inc., in Ridglea Bowl Restaurant.

He will talk on "Aviation: Yesterday, Today, Tomorrow and Beyond." GD/FW will host a social hour starting at 7 p.m. Erickson's talk will follow an 8 p.m. dinner.

Two GD/FW men are officers in the section. V. G. Polovkas is vice-chairman and J. D. Barnard is treasurer. Both are in Dept. 6.

Dynamics Ind. Relations Staff Members Named



J. L. Budros J. S. Derby G. A. Lewis G. D. Higgins

(News stories, similar to the following, reporting organizational alignments in other corporate departments, will be carried in subsequent issues of General Dynamics NEWS.)

Staff appointments, including the new position of director of labor relations, were announced this week by R. H. Biron, senior vice president-industrial relations.

Assignments, some of them new in title only, include J. L. Budros as director of personnel administration; J. S. Derby as director of labor relations; G. D. Higgins as director of industrial security; G. A. Lewis as director of organization and compensation.

Reporting to Lewis are E. C. McManus as manager of employee benefits; G. C. Spencer as manager of wage and salary administration; and A. C. Crum, executive assistant.

Reporting to Budros are C. M. Barlow, personnel manager (New York); H. T. Brooks, manager of personnel placement; R. B. Craig, manager of personnel services; and R. I. Morse, manager of office services (San Diego).

All have been with General Dynamics for a matter of years except Derby, who joined last month after four years in a similar position for Alco Products, Inc., Schenectady, N. Y. Previously he was director of industrial relations for Baldwin Lima Hamilton Co. Born in Lawrence, Mass., he holds degrees from Villanova University.

Budros has been with the company since 1942, joining at San Diego as safety engineer. He held other industrial relations posts before transferring to Fort Worth in 1948 to head the safety office and later the labor relations section. In 1953 he became personnel manager and in 1960 was moved to Biron's staff in San Diego. He graduated from San Jose State College and did graduate work at Stanford.

Higgins, educated at UCLA, is a veteran of Vultee Field and Stinson divisions (chief of industrial relations) and transferred to Fort Worth in 1948 as assistant industrial relations manager. He was named manager of industrial security for the division in 1951 and in late 1952 was transferred to Biron's staff as director of industrial security for the then Convair divisions.

Lewis, a Portland, Ore. native, took his degree at University of California in mathematics and economics and joined Vultee Field in 1942, transferring to San Diego in 1944. He has been assistant to Biron, specializing in organization and compensation, for more than ten years.

McManus was born in Kingston, N. Y. and took his degree at Holy Cross. Following Army service (1941-1947 in Quartermasters' Corps overseas and in Washington, D. C., a major) he took his master's degree in business administration at Harvard. He was with Philco Corp. and Ford Motor Co. before joining General Dynamics in 1956 in personnel services.

Spencer, a native of Greenville, N. J., was educated in San Diego, and at UCLA specialized in labor legislation and personnel management. He joined Convair in 1939 in shop departments, later transferring to industrial relations in wage and salary posts. He headed wage and salary for Pomona Division for a number of years before transferring to General Office in 1956.

Crum, from Marshall County, Ind., is a graduate of Western Michigan College at Kalamazoo and was with Michigan Bell Telephone before joining the Air Corps in 1940. After a period in Convair personnel office at San Diego he was recalled by the Air Corps and served until release as a captain in 1945. Returning to Convair industrial relations he transferred to General Office in 1950.

Barlow has been with General Dynamics since 1956 as coordinator of educational programs. Before that he was with Union Carbide Co. for 14 years, latterly as college recruiting coordinator. A Yale University graduate with a master's from Columbia, Barlow has administered various corporation recruitment, training and financial aid programs.

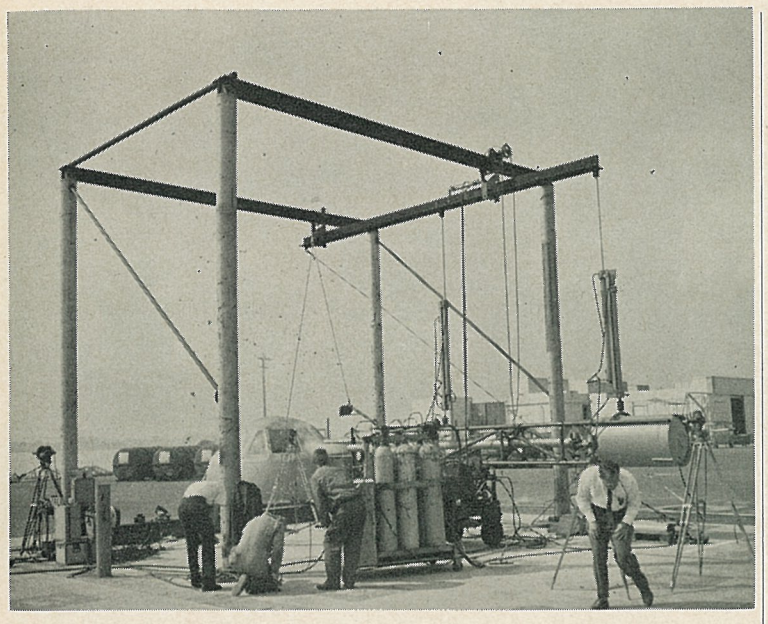
Brooks, born in Chicago and educated at University of Michigan, joined the company at San Diego in 1945 in industrial relations. By 1948 he was engineering personnel administrator and later in charge of executive de-

(Continued on Page 4)

Veterans of Vultee To Meet Oct. 21-22

Vultee Field veterans from throughout the country will gather at Town and Country Hotel Oct. 21-22 for the group's 14th annual reunion.

Wes Magnuson, GD/Astro, heading the arrangements committee, said a full round of events, including a luau dinner and a fashion show for wives, has been planned.



IMPACT!—Jerry Green, Earl Moore, Lyle Minkler, Bob Koser scatter for cover during impact tests on CL-44 windshield at San Diego testing site to prove resistance to flying objects.

Dummies' Shirts Remain 'Clean' In CL-44 Windshield Checkouts

Two sister divisions of General Dynamics Corporation have joined forces in developing design for the safest cockpit windshield they can evolve.

A Canadair Limited CL-44 cockpit has just finished punishment in GD/Convair's structures test lab in a series of impact checkouts. The windshield, made by Libby-Owens-Ford to original Canadair - Convair specifications, showed it could stand up under direct hits from flying objects without shattering on the pilots.

"The windshield is a 'double-decker,'" explained L. F. Minkler, Dept. 68 test engineer on the project. "It is made of three layers of glass with vinyl in between. It has a built-in defrosting system with electric conductive coating between the vinyl and glass."

Tests, completed the first of this month, were follow-on to a series which stretched over three months last summer at the San Diego ramp test site. At that time the cockpit was tested for impact resistance in the pilots' area with the windshield heated to 100 degrees F. Speed simulated approximately 320 miles per hour, cruise velocity of the turboprop transport at sea level.

Dummy styrofoam pilots within the cockpit, dressed in white shirts, received only a sprinkling of small glass chips (known as "spalling") which would not be hazardous to a human, said Minkler.

Besides the white shirts, which are marked with black from carbon paint beneath whenever hit by glass, dummies wear safety glasses with one lens in and one out. This shows what damage, if any, glass particles would do to pilots' eyes, with or without glasses.

This year's final test was a "cold shoot." The windshield was chilled to 20-30 degrees F. by passing gaseous carbon dioxide over it within an enclosed chamber. It "soaked" for an hour in the chilly temperature before shooting began.

Minkler, who had charge of the testing under A. R. Vollmecke, assistant group engineer, said that a cold windshield is much more likely to shatter than when heated. Warm vinyl stretches to "give" when hit by an object.

However, final testing showed dummies' shirts unmarked by flying fragments to give the windshield design a clear slate.



ARTIST—Jim House, GD/FW engineering supervisor, substitutes acetylene torch and scrap steel for paint and canvas.

Novelty

Sculptor Uses Welding Torch

Jim House, General Dynamics/Fort Worth engineering supervisor, substitutes an acetylene welding torch and scrap steel for the usual tools of an artist—and wins prizes at art exhibitions.

House is a sculptor in steel in his spare time.

Working in a completely equipped "studio" at his Lake Worth home, House first began cutting art forms from scrap steel only two years ago.

One of his first efforts, which he dubbed "Street Fighter," took second place in statewide competition of the Texas Fine Arts Association the same year.

House "sculpts in steel" without the aid of preliminary sketching or drafting. His works vary from abstract pieces to easily recognizable figurines in a Western theme: a cowboy with lariat, or a steer rider.

House concentrates on form and balance rather than symbolism. He says he works "just from feel." Most of his figurines are about two feet tall, weighing an average of from eight to 10 pounds each. He works with steel varying from one-fourth-inch rod to one-half-inch plate.

House's main tools are his torch, saws, hammers, pliers, drills, buffers, grinders.

GD/Astro Engineers To Present Papers For Stress Society

Two senior research engineers from General Dynamics/Astronautics will give papers at tomorrow's (Oct. 12) meeting of the Southwest Chapter of the Society for Experimental Stress Analysis in Los Angeles.

J. L. Christian will talk on "Properties of Aerospace Vehicle Materials at Cryogenic Temperatures," and C. K. Perkins' speech is titled, "Effect of Zero-Gravity on Cryogenic Liquids."

Other General Dynamics men attending the meeting will be C. R. Smith, A. R. Vollmecke, and G. D. Lindeneau of GD/Convair structures lab. Smith is Southwest section program chairman and Vollmecke and Lindeneau are members of the planning committee.

Fifty Enter Pilot Program In Business Systems Mgt.

Fifty forward-looking General Dynamics/Convair persons have entered the pilot "Business Systems Management" program, called the first of its kind sponsored by a West Coast company.

Designed to keep abreast of the constantly-increasing technical advances in today's "computer revolution," and to expand knowledge of all persons handling facets of the company's business systems, the course is offered through cooperation with Cal-Western University.

"There is a very definite need of such a training program, especially with the giant strides in electronic computing systems—which now automatically process data into information necessary for successful operation of any large company," W. E. Newton, GD/Convair educational services coordinator, said.

"Optimum business systems refinement and efficient utilization of electronic data processing systems, no matter how advanced, depend upon the human element."

The certificate program requires 42-semester units of college-level work, with classes held at Cal-Western, GD/Convair and San Diego City College in the evenings. It is open to all eligible General Dynamics computer programer or business systems personnel in San Diego.

Enrollment is open now for the second semester beginning February. Applications of eligible flat-salaried persons are accepted by Newton, ext. 2166, or R. H. Nall, educational services, ext. 2568, both GD/Convair, Plant 1.

Dynamics Ind. Rel. Staff Appointed

(Continued from Page 3)

velopment. Prior to joining Convair he was management consultant and personnel manager for mid-Western companies.

Craig joined at Fort Worth first in 1946. He left the company for a period, returning in 1948 as instructor in educational services and by 1951 was educational services supervisor. He became wage and salary administrator in 1953 and held this post before being transferred to San Diego this summer. He attended Texas A & M and served in the U.S. Army.

Morse, born in Bellingham, Wash., attended Carleton College in Northfield, Minn. and joined Consolidated in 1936. He held various factory supervisory posts and in 1943 was assistant division manager at New Orleans. He later held a number of posts in material and purchasing and served a three year period as district expediting supervisor in Newark, N. J. He has been manager of office services at San Diego since 1957.

Family Piles Up Century at GD

A total 94 years' service at General Dynamics divisions was recorded recently by one family when D. Paul Bender, GD/Astro field engineering supervisor (Dept. 324) received his 20-year pin.

His father, Homer M. Bender, is employed at GD/Electronics, while three brothers are long-time GD/Convair employees.

The senior Bender lists 12 years with the company, with 11 at GD/Convair before transferring to GD/Electronics Dept. 7 last year.

Wade M. Bender, GD/Convair Dept. 137, has 21 years' service; Homer B. lists 22 years and is in Dept. 123; while Frank S., Dept. 31, is a veteran of 19-years' standing. All are assistant foremen.

Paul is the "best-traveled" of the group. Like the rest of the family, he started at GD/Convair; spent two years at GD/Fort Worth; another year at GD/Convair; three years at GD/Pomona; and reported to GD/Astronautics in 1956.

An even dozen youngsters call the senior Bender "grandfather" now. Paul has three children, Wade three, Homer has four, and Frank two.

"The families always get together at Christmas," Paul remarked. "As you'd expect, there's a lot of lively conversation, with five of us 'talking shop.'"



WHAT'S THAT NAME?—Guards C. K. Hancock and D. T. Baldwin do "double take" as father and four sons enter plant. Homer M. Bender, GD/Electronics, Dept. 7, leads parade, followed by sons, Homer B., GD/Convair Dept. 123; Wade M., Dept. 137; D. Paul, GD/Astro Dept. 324, and Frank S., GD/Convair Dept. 31.

Engine Blasts From Convair Jet Transports Bounce Off New-Type Steel Deflectors

Jet engine blasts of Convair jet transports are bouncing off strong steel backboards, installed at two field operations locations at General Dynamics / Convair this summer.

The 120-ft.-long steel blast deflectors replace wooden fences which had served as blast walls throughout the propellor transport era at the San Diego plant. R. E. Dennington of GD/Convair facilities engineering said that the wooden structures couldn't stand up to full force of jet engine blasts, and, in time, might prove dangerous if they broke up during engine test runs.

Enough steel panels, 2½-feet wide and 12-feet high, were ordered in early summer from Special Products Division of Sremco, Chicago, Ill., to construct solid blast deflectors for four Convair jet 880s or 990s. Single sections stretch along north side of pits 1A and 1B and a back-to-back wall at pits 10 and 11. They can withstand 150 lbs. of pressure per square foot.

When they arrived at the plant they were solid steel, except for two rows of holes drilled along the lower edge. These holes vent the back side of the wall and prevent a back pressure from forming which would cause uplifting of the fence.

However, Dennington said that trials showed that extreme blast forces might eventually warp the steel. So, to relieve the pressure, geometric patterns of 3-in. half circles were punched (burned by torch first, then hammered back) in direct path of engine blasts.

"By bending back lips of the half-circles, direct pressure blast on the wall is reduced and exhaust gases are still deflected upward," explained Dennington. "Result of the rework was apparent in reduction of excessive wall deflection and vibration."

All sections are bolted solidly together — panel to panel — then into concrete foundation and to steel frames and supports erected by plant engineering.

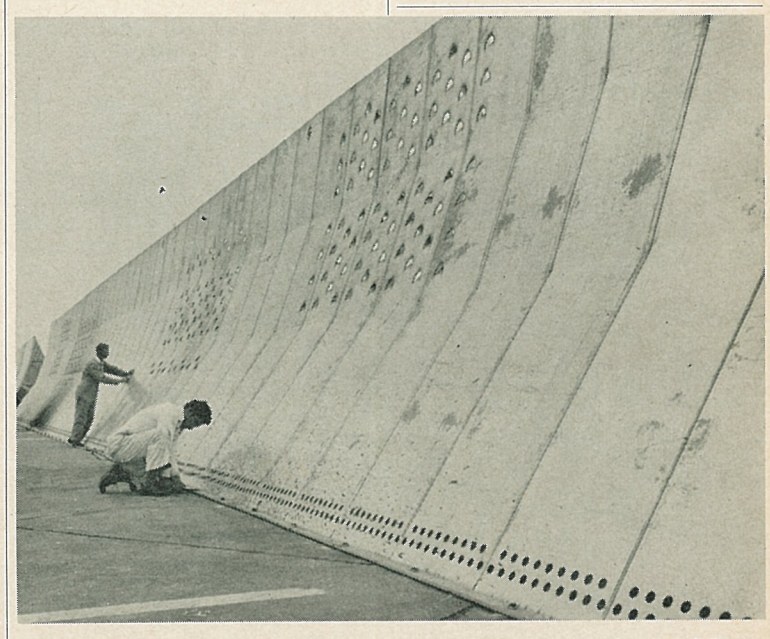
Save Material — Don't Throw Your Job Away!

Hustler 'Cover Girl' For AF's Journal

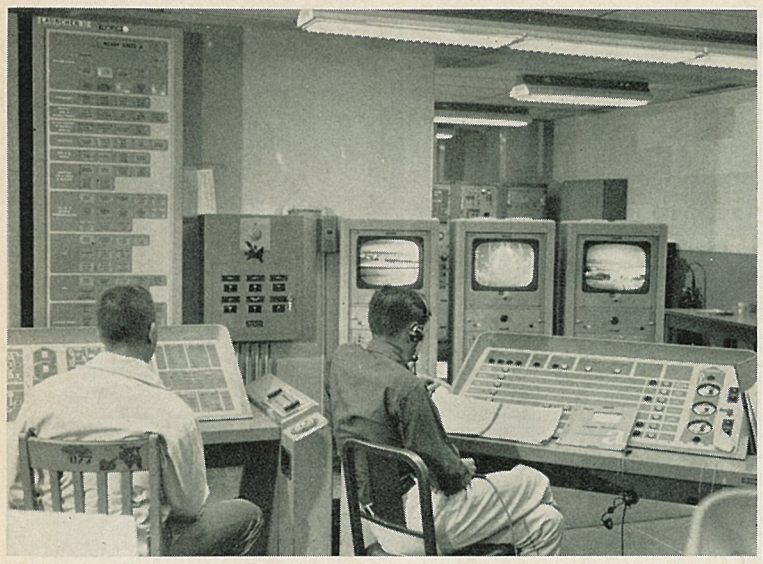
A B-58 Hustler is "cover girl" for October's "The Airman," official journal of the Air Force.

And the record-breaking feats of 43rd Bomb Wing crewmen in B-58s are chronicled in some detail in Dave Karten's full-length feature article, "Hustler."

"Until the . . . B-70 bomber becomes operational, the B-58 will remain the USAF's only supersonic bomber," the article says. "It is a reliable, effective weapon system manned by some of the world's most experienced airmen —a powerful deterrent to armed aggression."



STRONG BARRIER—E. E. Quick and Don Herrera, both of Dept. 171 at GD/Convair, tighten bolts in recently-installed steel blast deflectors at field operations pits. Notice pattern of half-circles punched in direct path of engine blasts to relieve force on walls.



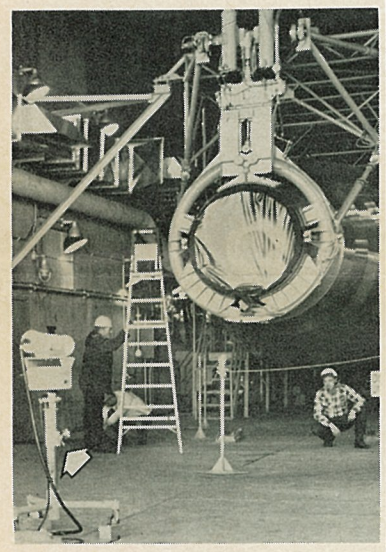
EXTRA EYES—Television monitors positioned within Atlas launch operations building give missile crew close-up views of all phases of test operations.

Atlas Launch Areas Scanned By TV to Keep Eye on Activity

Meters and gauges are invaluable for elaborate missile tests and operations, but for real "believing," "seeing" is still one of the missileman's most reliable guides.

Since early last year, General Dynamics/Astronautics motion pictures and television (Dept. 124) has provided missile crews with "extra eyes" by setting up portable closed-circuit television units at Atlas ICBM sites throughout the country.

Although installations vary, GD/Astro crews usually mount one camera permanently, and lay some 1,100 feet of camera, utility and lighting cable at each site. Other cameras may be shifted from complex to complex as required.



IN PLACE—Television camera (arrow) is set up in "coffin" launch complex as GD/Astro crew readies missile.

Teams of GD/Astro television specialists, all reporting to L. E. Steadman, television supervisor at San Diego, are on the job at Fairchild AFB, Wash., Warren AFB, Wyo., and Schilling AFB, Kan.

During fueling, crew procedures training and other tests, three to four cameras with special lighting units located throughout the launching area are focused on the missile and its associated equipment.

What the cameras "see" is displayed on three television monitors inside the launch operations building (LOB).

"Using remote control units, crewmen in the LOB can 'pan' and 'tilt' cameras as desired to scan the entire launch area," Steadman explained.

On several occasions, problems have been avoided because television helped crews spot faulty connections, leaks and other malfunctions in time to permit corrective action.

The 18 mobile units installed at Atlas "E" series complexes to date have proven so successful that television soon will become a permanent feature of all Atlas sites in this series.

GD/Astro will provide technical coordination and direction.

General Dynamics Specialists Speak at International Seminar

Two General Dynamics Corporation specialists will be among United States representatives at an international seminar in England this week.

Invited to give papers at the Technical Seminar on Infrared Guidance Techniques at Malvern, England, Oct. 9-13, are Romuald Anthony of General Dynamics/Convair and L. A. Jeffries of General Dynamics/Pomona.



Rom Anthony

They are two of 27 outstanding military and industry experts chosen by the Department of Defense, Research and Engineering Division, Washington, D. C., to represent this country. The Malvern meeting, on the site of the Royal Radar Establishment, is sponsored jointly by United Kingdom, Canada, and United States for exchange of technical information on infrared guidance development, and related fields.

Anthony, who heads infrared and optics activities at GD/Convair, will speak on "Observation of Infrared Horizon Gradients with Application to Orbiting Vehicles." In part, his paper deals with research at GD/Convair under the vertical rocket probe program for the Air Force.

"A Sandwich-Type Detector for Negative Contract Operations," is title of Jeffries' paper. G. W. Ashley was co-author. Jeffries is assistant supervisor of the GD/Pomona physics and infrared group. He was a former research assistant with Atomic Energy Commission's Ames Laboratory.

Anthony, who joined Convair in 1958, was a key figure in the first high-altitude solar research in the infrared in 1948 at Naval Ordnance Test Station, China Lake, Calif.



'Hand-Me-Down'

Construction of First Delta, '7002' Okayed in '46 on Low Budget Level

(Following is installment No. 69 in a continuing history of General Dynamics products of past.)

The only indicated disadvantage (of the delta wing) was poor lift/drag ratio at low speeds, and the Air Force in November, 1946, approved construction of a full-scale, 60-degree, delta-winged research craft with standard jet power plant, for evaluating the configuration.

To conserve research funds, the contract specified completion "in the shortest possible time, using available materials. No attempt shall be made to meet existing specifications . . . and existing parts from other airplanes shall be used where possible." (Engineers managed to work into the design the main landing gear from a JF-1, nose gear from a P-63, pilot's ejection seat from a YP-81, and other hand-me-downs.)

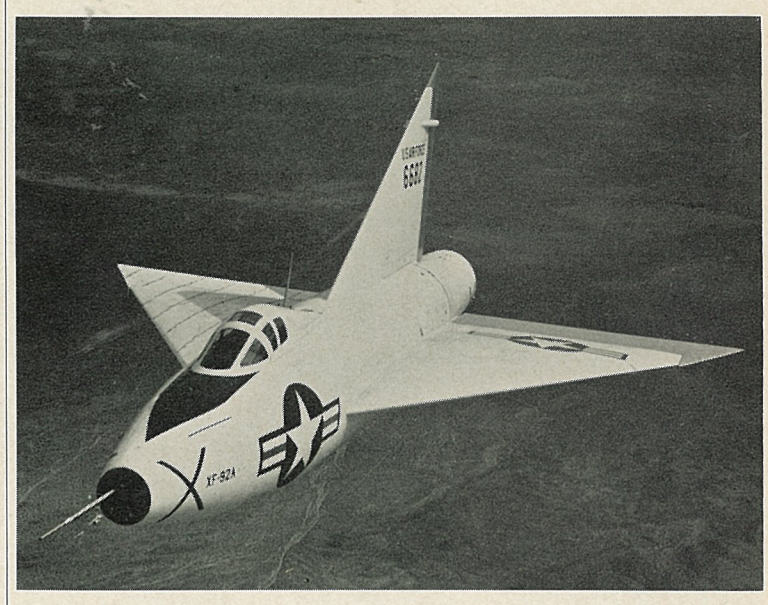
The model was designated 7002 (which happened to be the accounting department's work order number). After flight tests and acceptance, the Air Force called it XF-92A to distinguish it from the -92 ramjet project. The design evolved as a midwing monoplane with the engine air intake in the nose. The wing extended almost the length of the fuselage, requiring a radical change from conventional tail configurations. A triangle-shaped vertical fin was mounted, with rudder in the trailing edge. Functions of ailerons and elevators were combined in "elevons" set into the wing trailing edge.

Construction was well along when Vultee Field was closed in the summer of 1947, and the plane was completed less engine that fall at San Diego. In December it was shipped by Navy cargo vessel to San Francisco and trucked to the NACA Ames Aeronautical Laboratory, Moffett Field, for full-scale wind tunnel tests. These verified previous small-scale tests and the 7002 was returned to San Diego (thumbing a ride on the aircraft carrier Boxer).

In the post-war decade jet engine improvement seldom materialized as soon as airframe designers hoped. In 1945 it was anticipated that the G.E. I-40 or Pratt & Whitney Nene would offer thrust ratings of 7,000 or 8,000 pounds when 7002 was ready to fly. Instead, she was fitted with an Allison J33-A21 (nominal thrust 4,600 pounds) and taken to Muroc April 1, 1948. The engine lacked power and tests were limited to taxi runs on the 7-mile-long dry lake bed. Then an improved dash-A23 was substituted and the plane flew Sept. 18 with E. D. (Sam) Shannon at the controls. (He reported normal performance, except for lag in hydraulic-system response to stick and rudder signals.)

Up to now the delta torch had been carried by a handful of engineers. The radical configuration evoked little enthusiasm within either the company or the Air Force. As the test program proceeded the plane attracted widening attention. Original plans called for retiring it after 50 hours' company testing. Instead, the Air Force took over with a 30-hour evaluation program of its own, and NACA became interested. After a dash-A29 engine was fitted in May, 1951 (5,300 pounds thrust plus afterburner), the Air Force and NACA continued testing the heavily instrumented plane another year.

Test pilots Capt. Charles Yeager and Maj. Frank K. (Pete) Everest did most of the early flying for the AF. They found the high performance plane easy to maneuver and land and exceptionally stable in the transonic region around Mach .9. The aircraft lacked power to pass Mach I and is known to have flown faster than sound only once—when Yeager flipped it on its back and pulled 4 Gs to put it into a vertical power dive. Yet Convair engineers were satisfied they had found a supersonic configuration. In 1951 they had an opportunity to prove it.



WORLD'S FIRST — This was XF-92A, world's first delta wing aircraft, as it looked on early flights. Eventually it was converted to traveling exhibit.

XF-92A Plane Finds Home at University

XF-92A was the world's first delta wing plane.

Project engineer during the construction windup and long test program was Thomas M. Hemphill. In the summer of 1954 the plane's wings and fin were cut and hinged, to fold for highway travel by truck. It appeared on exhibition at many air shows (was a part of the 1955 Rose Parade at Pasadena) and last year was donated on a permanent basis to University of the South, Suwanee, Tenn.

Engineer Team Bags Contract To Develop Landing Strip Mat

General Dynamics/Convair engineers are designing matting for use in a portable landing strip for Marine fighter craft under a Navy contract received recently.

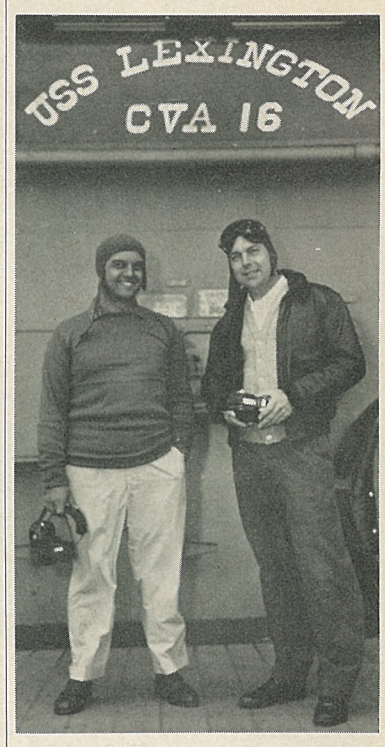
Awarded by the Naval Air Materiel Center, Philadelphia, Pa., the contract in the amount of $88,000 is the result of direct sales efforts of a GD/Convair perimeter engineering team headed by C. S. Brandt, chief of product support. It calls specifically for design, fabrication, and testing of SATS (small airfield tactical support) Landing Matting with work to extend over a period of 20 months.

Project leader, G. L. Pankey, and Ladislao Pazmany, both senior design engineers, are responsible for coordination of efforts.

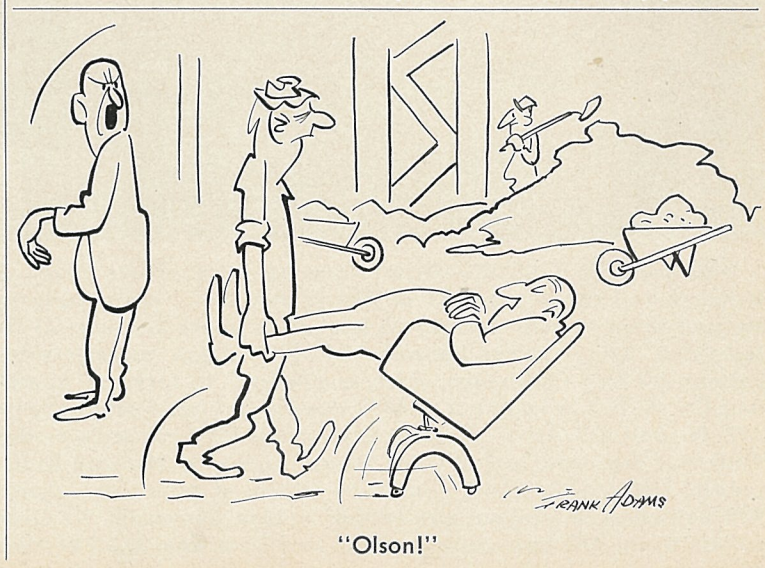
According to Pankey, lightweight materials will be studied and tested for construction of portable panels, about 20 square feet in size. These panels, when laid to form a short landing field 2,000-ft. by 72-ft. wide, must be strong enough to withstand arrested landings and catapult takeoffs of latest-type Marine Corps jet aircraft.

Pankey and Pazmany were aboard the USS Lexington off San Diego coast this summer to study problems in aircraft landings and takeoffs which are similar to those anticipated on portable landing fields. The SATS fields would, to all practical purposes, be land base adaptations of aircraft operations.

The current GD/Convair contract is one of the first of this type to be obtained on a competitive bidding basis, Pankey pointed out, and due entirely to concentrated efforts of perimeter engineering which entered the sales field to push division capabilities early this year.

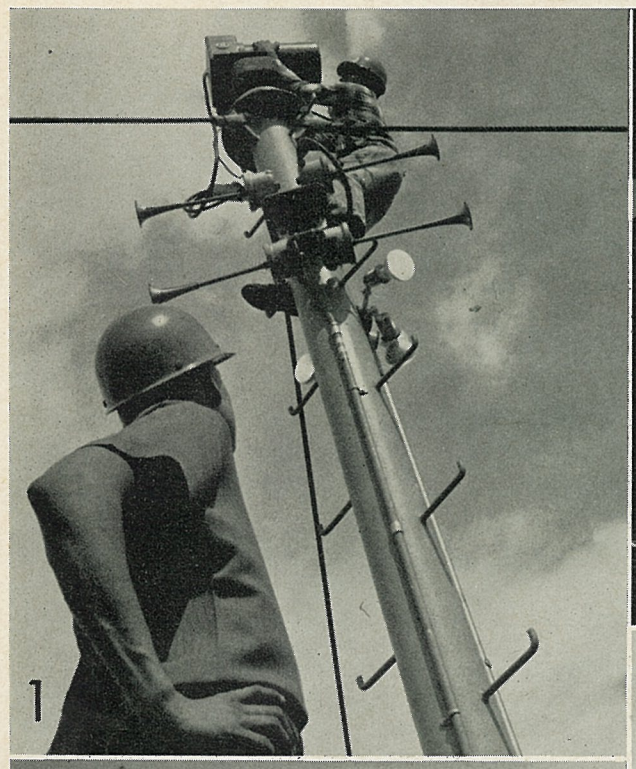


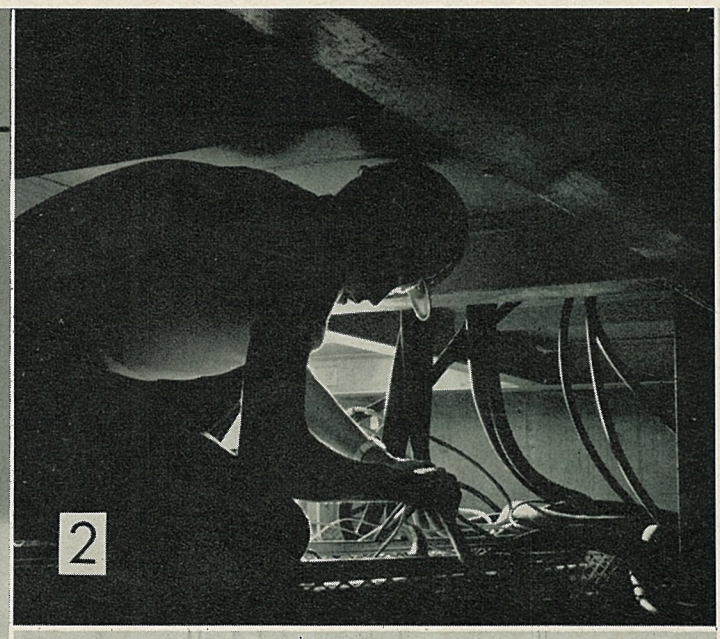
SHIPBOARD STUDY—GD/Convair engineers, Ladislao Pazmany and G. L. Pankey, cruise on USS Lexington to study short landing problems.—U. S. Navy photo.

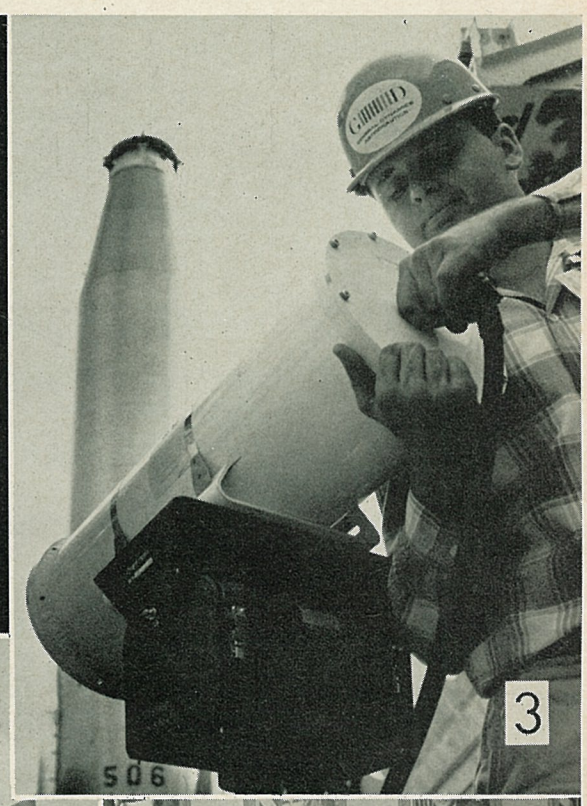


"Olson!"

Roving Cameramen Cover Far-Flung Astro Off-site Bases


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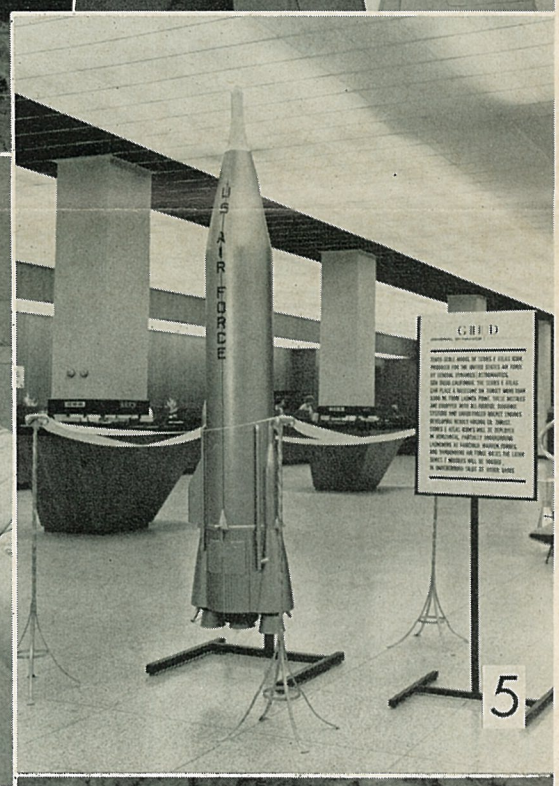

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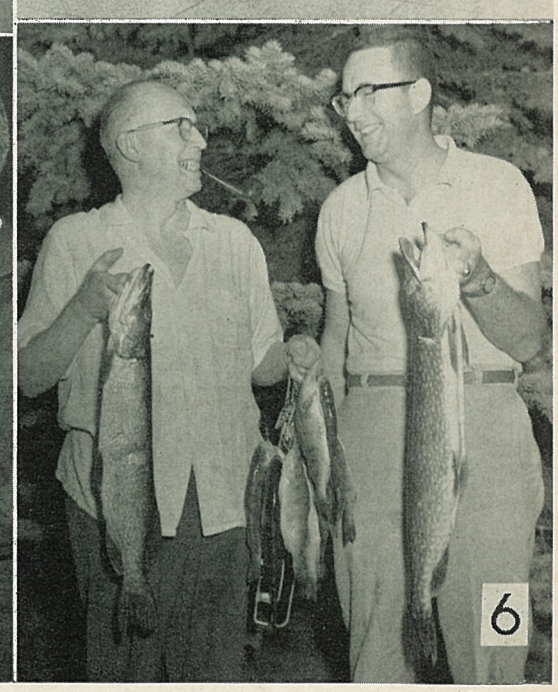

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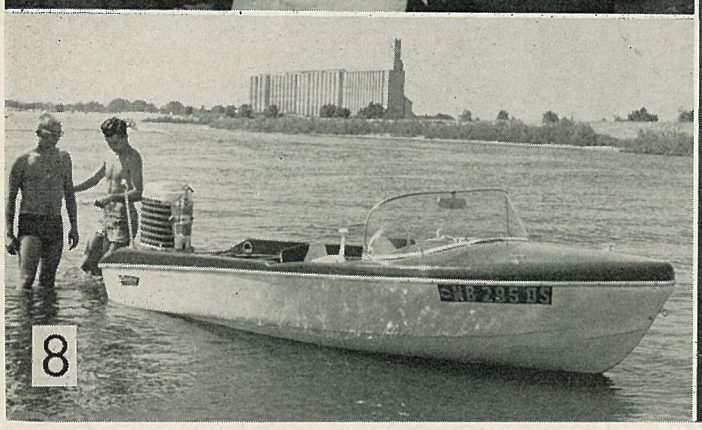

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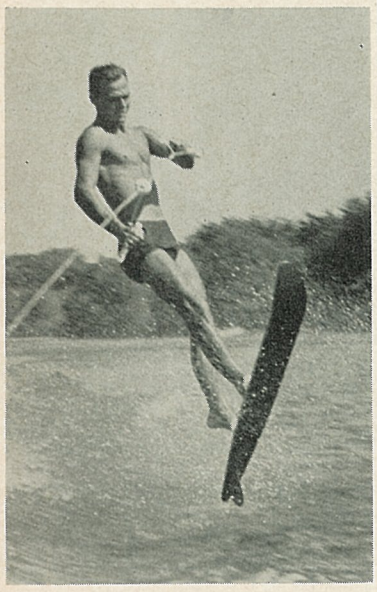
AROUND THE CIRCUIT—Photos covering Atlas off-site bases show (1, 2, 3) installation of closed-circuit TV at Warren AFB. In (1) Mike Young watches John S. Morgan repair camera mounted on mast 30 ft. above building; (2) Young, television technician, strings cables beneath LOB; (3) Morgan connects video cable to TV camera. (4) Fred Christensen, safety engineer; C. R. Jackman, operations manager; and Col. A. M. Cruikshank Jr., SATAF commander, show off trophy won by Schilling AFB for best GD/Astro off-site safety record; (5) Tenth-scale model of "E" series Atlas was prominent in Fall Open House displays in National Bank of Commerce, Lincoln, Neb.; (6) Bob Locke and Mike Bickers of Astro's operations at Plattsburgh AFB heft catch of northern pike hooked in Lake Champlain. (7) George Morgan of Astro's Dyess AFB operations receives certificate from GD/FW Management Club prexy, C. C. Utley, for "Selling America" efforts. (8) Massive grain elevator provides inland background for water skiers Jerry Vadd and Mike Seehass on State Lakes near Lincoln AFB. (9) C. A. Klyber, right, Astro inspection assistant supervisor at Plattsburgh AFB, with partner, Shirley Tetrault, and manager of sponsoring restaurant after winning dance contest. (10) "Atlas E," mascot at Forbes launch complex shows identification to security guard. Dog has lived at complex, in office of W. B. Swindall, since its beginning. (11) Little League team coached by Astro men, H. L. Olson, left, and C. M. Kinney at Altus are shown with trophies for winning five-community tourney. (12) B. T. Boone, left; J. H. Walk; F. J. Childress, chairman; B. M. Malone; and C. Gilchrist shown after election to board of directors of Lincoln AFB Supervisors' Club.

Inland Lakes Draw Crowds

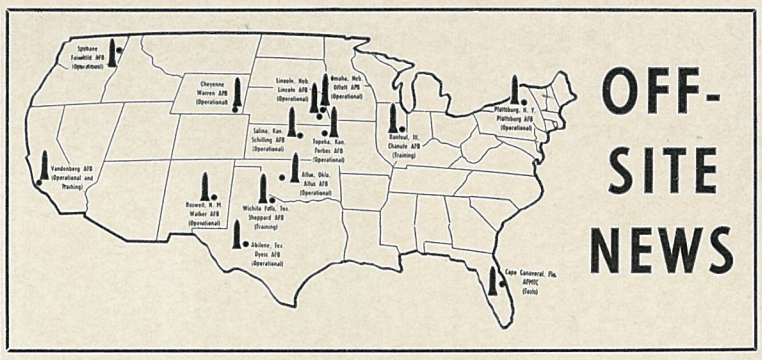
LINCOLN AFB—During summer months, GD / Astronautics employees here spent much of their leisure time on, or in, the water, Maxine Utley, Dept. 616, reports.

Site of much of this activity is the State Lakes area near Fremont, Neb., where entire lakes have been designated for specialized uses such as swimming, boating, water skiing and fishing. This arrangement insures that no sport interferes with another.

"Most avid among the water sportsmen are the water skiers," Maxine stated. "Some start in early April when temperatures are in the low 60s. When warm weather arrives, the real enthusiasts are on the water an average of three times each week throughout the summer."



RIDING HIGH—Tricky ski maneuver lifts Dwight Bartlett of GD/Astro's Lincoln AFB operations right out of water on State Lakes near Fremont, Neb.



OFF-SITE NEWS

GENERAL DYNAMICS NEWS CONTACTS

AFMTC—P. C. Brown, ext. 3-4741.
ALTUS—John Lockwood, ext. 7141.
DYESS—G. D. Higgins III, ext. 8370.
EDWARDS RS—Chris Marques, ext. 27.
FAIRCHILD—C. C. Clickner, ext. 5596.
FORBES—Jane Cordner, ext. 4514.
LINCOLN—David Reichenbacher, ext. 264.
PLATTSBURGH—Kenneth Emery, ext. 6242, 6243.
SCHILLING—D. J. Rahlfs, ext. 8136.
SHEPPARD—Steve Delbridge, ext. 8243.
VANDENBERG—Lucy Signorelli, ext. 8-5046.
WALKER—Rod Bricker, ext. 2309.
WARREN—Alice Watters, ext. 73-716.

Catalytic Nine Captures Title

WARREN AFB — A strong Catalytic "A" team defeated the GD/Astro planning department club 8 to 6 in a post-season elimination game to win the ARA softball league championship here.

The two teams had ended regular season play in a tie of 7 wins, one loss each.

Production control was in third place with a 6-win, 7-loss record, followed by calibration lab, 5-3; industrial engineering and transportation, 4-4 each; and MAB, industrial relations, and Catalytic "B," 1-7 each.

Mel Kerber, league president; A. H. Muller, vice president; and Jim Allen, ARA representative, joined in expressing appreciation to all teams participating.

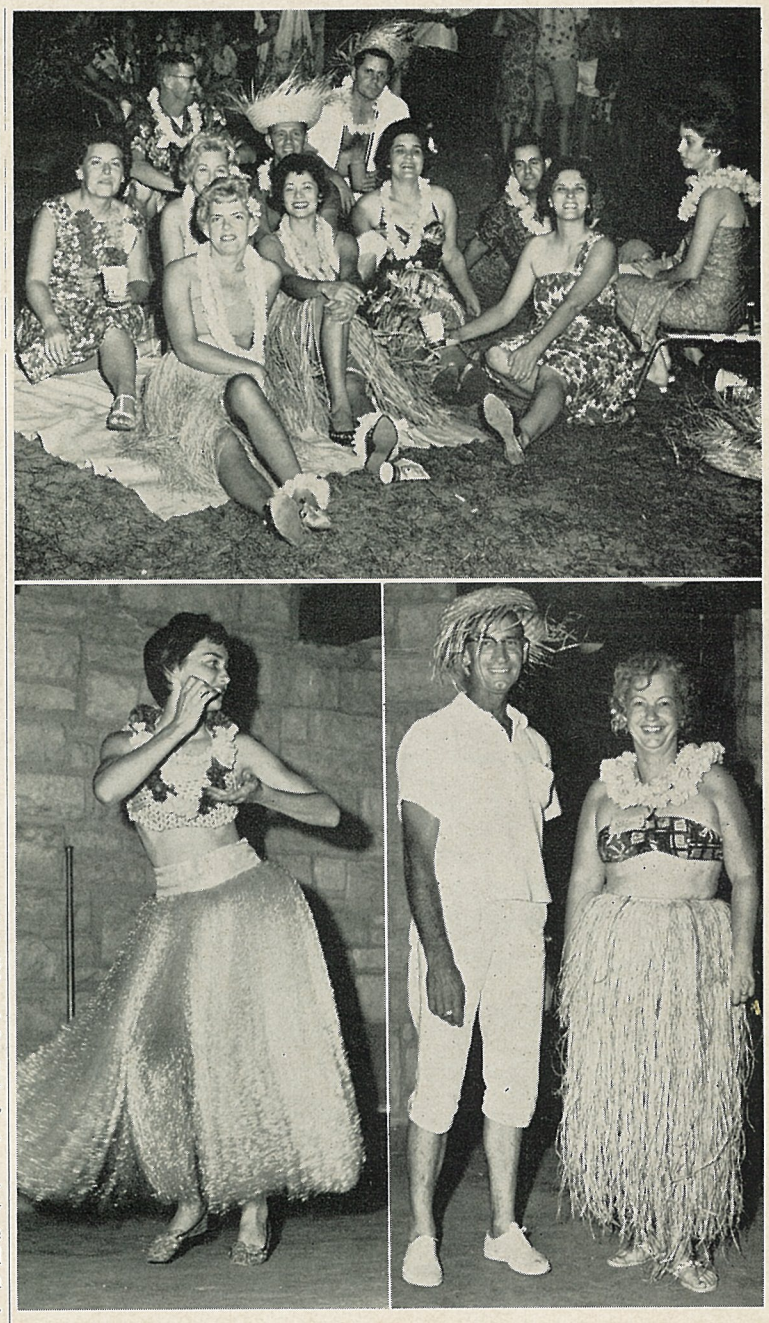
LUAU A SELL-OUT AT LAKE SHAWNEE

FORBES AFB — A tropical luau on the shore of Lake Shawnee was attended by a sell-out crowd of 140 General Dynamics/ Astronautics employees recently.

Sponsored by GD/Astro Wives' Club, the event featured a menu of roast pork and chicken chow mein. There were flower leis for guests and "authentic" island entertainment.

John Murdock served as master of ceremonies for a show which included dances by Mollie Perdue and a hula line comprised of Mollie, Dusty Callas, Eileen Southard and Judy Herman.

A picnic shelter, used as headquarters for the event, was decorated by Peggy Dent, Ruth Rogers, Patsy Garcia and Barbara Kriens. Doreen Cooney was in charge of ticket sales.



TROPICAL MOODS—Menu, costumes and lake-shore location provided authentic atmosphere for luau attended by 140 GD/Astro folk at Forbes AFB. Below right are Ray Puterbaugh (beach boy) and Mrs. Ariel Nichols who won costume prizes. At left is Mollie Perdue, featured dancer.

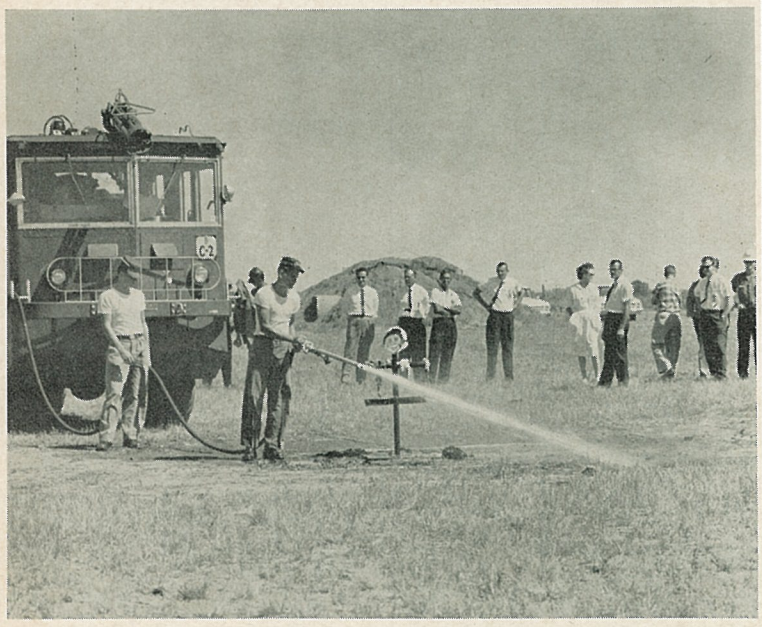
Altus Fire Prevention Classes Help 'Fight Fire With Fire'

ALTUS AFB — GD/Astronautics employees here learn to "fight fire with fire" in graphic fire prevention and safety classes taught by John Lockwood, educational representative.

Lockwood's classes, now in their twelfth week, center on safe handling procedures for liquid oxygen (LO2). They are presented at Altus AFB munitions range to all new GD/Astro employees here, and to Air Force personnel.

In a three-phase demonstration, violent reaction of LO2 when contaminated. A second "show" features a colorful dummy whose "clothing" is saturated with gaseous oxygen, then ignited with a spark. A third demonstrates the combined potential of LO2 and fuel.

"These demonstrations emphasize the need for safe equipment when working with LO2, a respect for its potential, and emergency procedures in case of accident," Lockwood explained.



BURNING LESSON—GD/Astro personnel at Altus AFB watch AF Munitions Squadron extinguish blazing dummy saturated with liquid oxygen during safety demonstration conducted by John Lockwood.



WARREN WIVES—GD/Astro Wives Club at Warren AFB also adopted Hawaiian Island theme for recent gathering that attracted 50 guests.

Ballet School Girls Entertain at Warren

WARREN AFB—A Hawaiian theme featured General Dynamics/Astronautics Wives Club here at its September meeting at Frontier Hotel, Cheyenne, Wyo.

A committee of Cleo Magee, Shirley Sorter, Sherri Robirds, Ima Ritchason, Gloria Newman and Bobby Jarmon handled arrangements for the luncheon event, which included entertainment from the Elizabeth Tolerton Ballet School.

A bingo party at the Plains Hotel last week highlighted club activities for October.

Lincoln Management Gets Together in Club

LINCOLN AFB—To overcome disadvantages of widely spread work locations, members of General Dynamics/Astronautics management here have organized a Supervisors' Club.

A club board of directors is headed by F. J. Childress, chairman, and includes B. T. Boone, J. H. Walk, B. M. Malone and C. Gilchrist.

Monthly dinner meetings help club members get better acquainted, both personally and with common problem areas.

Astronautics 'Sleuth' Locates Owner Of Wandering Omaha High School Ring

LINCOLN AFB—A high school class ring, a GD/Astronautics receptionist, and some fancy "detective work," are all part of a small drama which took place here recently.

The story began when a guard at GD/Astro's Wahoo, Neb., facility found a ring with an "N" insignia, engraved with the initials "B.T." When it was unclaimed for three weeks, Joan Harris, Bldg. O-1 receptionist, began active efforts to find the owner.

More work than glamour was involved in Joan's "detective work." She carefully checked telephone directories of all surrounding towns, finally settling on North High School, Omaha, as a likely place to inquire further.

Because it matched those chosen by the school, the ring was sent to North High where the owner soon identified it.

Joan's efforts were rewarded in the letter she later received from the school principal:

"I wish to thank you for the part you played in the return of the ring. You restored my faith in humanity and support the statement, 'There are some kind, thoughtful people left in the world if you can find them.' "

Joan is modest about her part in the drama. "The ring was for next year's graduating class," she commented. "I know how important that ring is to its owner."

GD/Astro Linksmen Team for 29 Score

WALKER AFB—Four GD/Astro golfers recently tied an Air Force team for honors in a low ball foursome tournament sponsored by the Walker AFB Golf Association.

Tying score of 29 on nine holes was recorded by Bill Chetney, H. C. Hatch, Charles Slaven (all Dept. 333-2) and Jim Allen (Dept. 619-4).

Two Astro Families Celebrate 'Double'

SCHILLING AFB—It was a "double event" for J. A. Merian and R. F. Shea, both GD/ Astro employees in the same office at the same launch complex here on Labor Day (Sept. 4).

Little Kevin Eugene Shea and John Merian were both born on that date in the same town at the same hospital.

Six From GD/Astro Wives Club Honored For Services to Red Cross in Kansas

SCHILLING AFB — Six members of GD/Astro Wives' Club here were commended for volunteer services to Red Cross agencies.

Mrs. Bernice Martin, Mrs. Betty Ashfield, Mrs. Helen Donaldson, Mrs. Ethel Fritz, Mrs. Betty Graves and Mrs. Eunice Landry contributed nearly 400 hours' service in less than five months.

Mrs. Helen Biermann, Red Cross Staff Aide chairman here, cited the women for services to the base hospital, the Salina, Kan., blood bank, and to Red Cross offices.

Long Career Forecast For 'Forty Four' as Best Of Freight Airplanes

A prediction that the Canadair Forty Four turboprop will remain the world's best freight airplane for years to come was made recently by Robert W. Prescott, president of Flying Tiger Line.

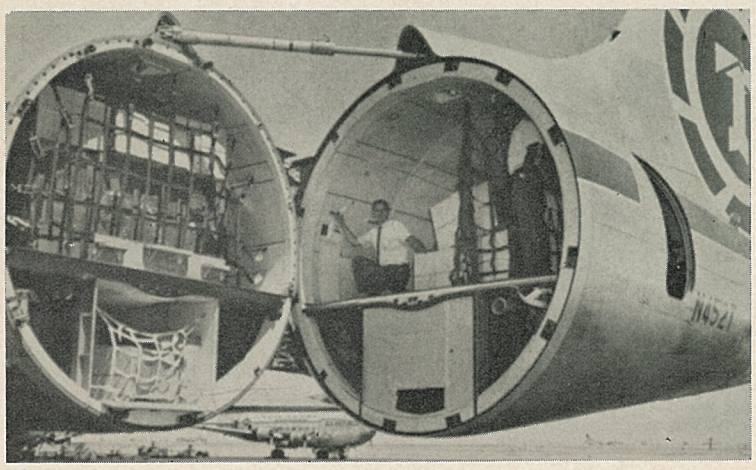
In the first 1,600 hours of flight time Flying Tiger's initial five Forty Fours of the 10-plane order proved out everything that had been predicted for them in economy, reliability and capability, Prescott told the press at a Washington, D.C., demonstration. Forty Fours are built by Canadair Limited, subsidiary of General Dynamics Corporation.

The first scheduled flight for Flying Tiger was made by a Forty Four July 16 when "51T" left Travis AFB (near San Francisco) on a MATS flight carrying 134 passengers and a crew and inspection team of 16. It landed in Tokyo 19 hours, 24 minutes later, with a fuel stop at Anchorage, Alaska. A little more than 12 hours afterward 51T was on its way back to the states with another load of passengers.

On another Forty Four flight to Tokyo Flying Tiger claimed a new record of more than 61,000 pounds of freight transported over ocean. In the first transpacific freight flight by a Forty Four, 52T left Travis July 28 and flew via Honolulu and Wake Island. Less than seven hours after arrival it took off for home. Total elapsed time for the round trip was less than 48 hours. The lift surpassed the previous mark held by a Flying Tiger Super H Constellation of 44,600 pounds of cargo.

Despite the record, the Forty Four was not loaded to capacity.

Seaboard World Airlines, operating from New York to Europe, is flying two Forty Fours of five ordered. Slick Airways will receive two Forty Fours this fall.



LOADED—Ready to secure swing tail, Forty Four is loaded with record freight tonnage by Flying Tiger Line prior to takeoff for Tokyo.

GD/Convair Delegation To Attend 'William Tell'

At least 16 General Dynamics/Convair men will be on their way to Panama City, Fla., next week to observe performance of Convair jet interceptors in this year's USAF Worldwide Weapons Meet (called "William Tell") at Tyndall AFB.

In charge of GD/Convair's participation is H. J. Richardson of GD/Convair marketing.

Others planning to be on the site during the maneuvers are R. W. Warden Jr. of General Dynamics military relations; O. W. Harper, GD / Convair manager customer service; L. E. Ottem, chief military programs engineer; Roy Sommers, chief interceptor service; W. W. Fenton, Hal Wilson, Rod Fowle, S. B. Stevens, all of interceptor service engineering; Howard Kennedy, chief of service publications; L. J. Solheid and G. P. Williams, both of service publications; P. A. Carlson, Model 8 project engineer; W. A. Daniel, assistant Model 8 project engineer; E. A. Fish of customer service; Howard Auten, test pilot at Holloman AFB; R. E. Myrann, engineering test pilot, formerly chief test pilot at Palmdale.

Full Passenger Loads Riding TWA 880s As Jets Streak From St. Louis to N.Y.

Full passenger loads welcomed Trans World Airlines Convair 880 service connecting Tulsa, Okla., with St. Louis and New York in late August.

According to Tulsa Daily World aviation columnist Frank Leslie, "the most heartening thing, on Aug. 19 and 20 inaugural flights, was hearty passenger loads hauled by the swift, four-engine jets.

"The Convair 880 was about half full when St. Louis passengers departed on the Saturday return. But the plane filled up again when Tulsa-bound travelers boarded.

"TWA had about 40 people waiting at the Tulsa Municipal Airport for the afternoon return trip Saturday.

"This TWA SuperJet leaves the ground like a 'scrambled' fighter called to combat duty," wrote Leslie, whose comments were forwarded by Glen Arner, General Dynamics/Convair service rep at Oklahoma City. "And once aloft, it seems to take pure physical pleasure in streaking to its destination!"

RCAF Orders 190 CL-41 Jet Trainers From Canadair Ltd.

Canadair Limited's CL-41 has been chosen the new basic jet trainer airplane for the Royal Canadian Air Force.

Canadian Minister of National Defence Douglas S. Harkness announced that 190 are being ordered to enter service in 1963.

"The RCAF has been considering the introduction of a basic jet trainer for several years, and has tested and evaluated most of the training aircraft available," Harkness told the House of Commons. "The CL-41 is the newest and most modern jet trainer available."

Designed, developed, and produced in prototype by Canadair as a company venture, CL-41 has side-by-side seats, and is capable of teaching a student pilot his whole course from first flight to supersonic airplanes.

With a speed range from 75 miles an hour to 475, the CL-41 has an altitude capacity of 44,500 feet and a typical training mission endurance of two and a half hours.

CIP and ES Savings Pass $50 Million

Combined installed savings from Cost Improvement Proposals and Employee Suggestions since the program's inception at General Dynamics/Fort Worth in 1942 reached the $50 million mark in August.

And cash awards to employees for installed ESs reached a cumulative $383,174. M. J. Scott, administrator of the suggestions program, estimated that about 20 per cent of the over 66,000 ESs submitted since 1942 had been approved and installed.

"The $50 million record is one that every department can be proud of," Scott said.

Helping to push the installed savings total over the top in August were two CIPs totaling over $100,000.

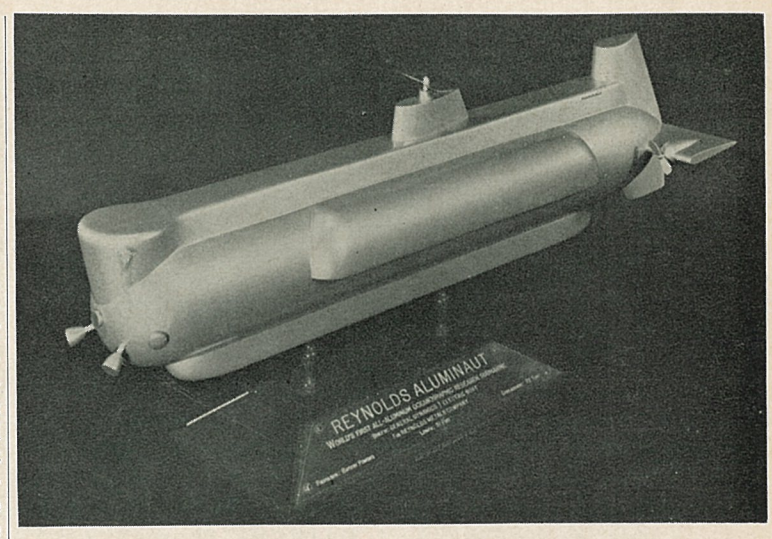
J. T. Rhoades, Dept. 74 assistant foreman, saved an estimated $73,636 the first year with his suggestion to discontinue complete refinishing of B-58s between flights and replace only decals that cannot be clearly distinguished.

Another Dept. 74 assistant foreman, W. G. Allen, suggested sewing a row of stitching ¼-inch in from the outside edges on B-58 insulation panels, reducing sewing time and saving material.

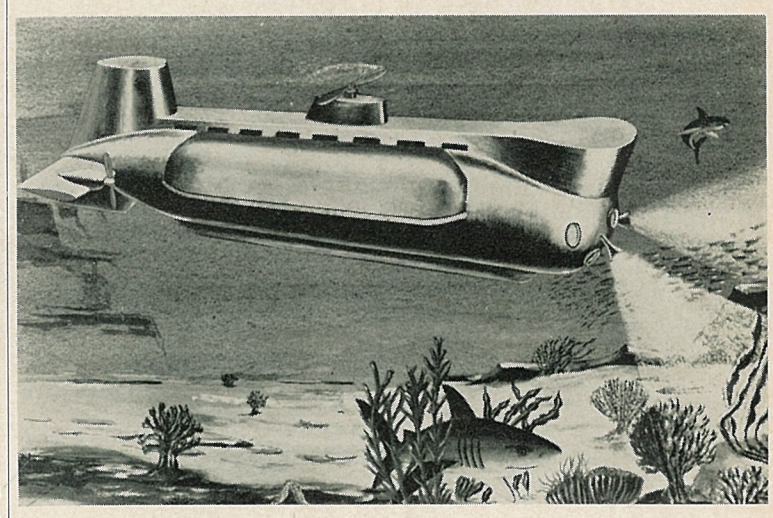
GD/Electronics Wins Tracking Contract

General Dynamics/Electronics has been awarded a contract by the U.S. Naval Supply Center, at Oakland, Calif., to produce three "Two-way Doppler Tracking Systems" for shipboard operation on the Pacific Missile Range.

The systems, which will make extensive use of solid-state circuitry, will include tracking antennae, ultra high frequency transmitters, extremely sensitive phase-lock receivers, and data processing and recording equipment.



"ALUMINAUT"—General Dynamics' design for "oceanographic research submarine" to be built for Reynolds International was disclosed this week. Above is model of deep-diving (15,000 feet!) craft.



ON OCEAN FLOOR — Artist's conception shows "Aluminaut" cruising ocean deep. Craft is designed to carry pilot and two scientists.

Sensational Aluminum Submarine to Explore To 15,000-Foot Depths

An aluminum research submarine designed to explore the ocean at depths many times beyond the limit of existing subs will be built for Reynolds International, Inc., by General Dynamics Corporation's Electric Boat Division.

J. Louis Reynolds, chairman of Reynolds International, Inc., a subsidiary of Reynolds Metals Company, and Frank Pace, chairman of General Dynamics, have announced signing of a $2 million design and construction contract for the Aluminaut—first submarine ever to be constructed from aluminum.

Woods Hole Oceanographic Institution (Massachusetts) will operate the sub as part of a research program sponsored by the Office of Naval Research, (ONR) United States Navy. Most of the construction costs incurred by Reynolds will be recovered through lease of the craft for oceanographic research.

Construction of the Aluminaut will begin immediately at Electric Boat Division in Groton, Conn., and launching is scheduled for 1963.

"Designed to operate at depths of 15,000 feet — almost three miles down — the Aluminaut will permit man to explore about 60 per cent of the world's ocean floor — most of it for the first time," Reynolds said.

The Aluminaut is scheduled to be equipped with sonar, TV cameras for detailed observation of the ocean floor and robot hands to obtain specimens.

Displacing 150,000 pounds, the Aluninaut will be slightly over 50 feet long with an eight-foot-diameter hull. Separate electrical propulsion systems will give the three-man craft both horizontal and vertical locomotion. Its operating range will be about 80 miles.

"The sub's hull will be constructed by bolting together large, one-piece cylindrical sections of high-strength aluminum forgings. The world's largest aluminum ingot already has been cast for the first hull section," Reynolds said.

"Aluminum was chosen because it is three times lighter than steel and has greater strength for its weight than other available metals. This allows fabrication of a hull thick enough to withstand tremendous pressures at great depths, yet light enough to stay afloat without external buoyancy.

"In our constant research for new uses for aluminum we long have been convinced that an important potential lies in the field of ship and certain types of submarine hulls," Reynolds said.

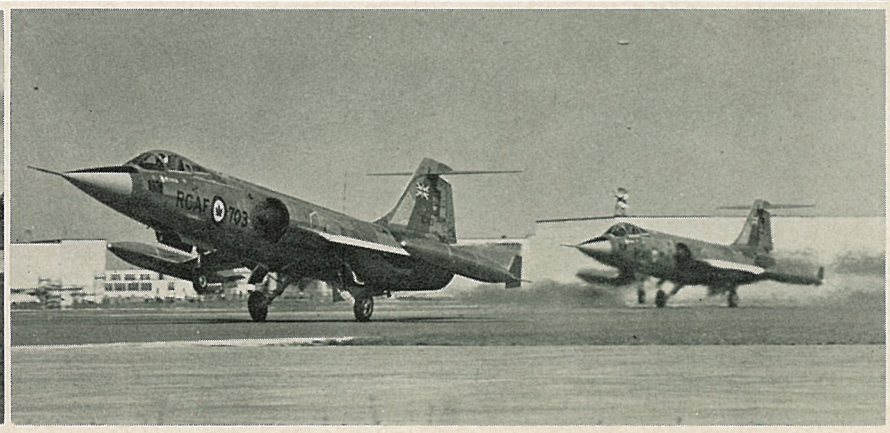
Operating independently of hoists from surface ships, the Aluminaut will be a true submarine, capable of cruising the ocean floor.

A vertical propeller will permit it to hover for special observations, and serve to regulate rate of descent and ascent.

Speed will be 3.8 knots, with a 72-hour maximum time submerged. Storage batteries will drive the vertical propeller, as well as twin screws at the stern.

"The ocean floor is a relatively unknown treasure house of minerals, oil, chemicals and food sources," Reynolds added. "A new generation of undersea craft . . . could be equipped with mechanical arms to operate mining equipment, make borings and collect material from the sea bottom."





CF-104S AT MONTREAL — Tenth CF-104 built by Canadair Limited at Montreal rolled off final line recently. Ships No. 3 and 4 were test flown from Palmdale, Calif., this summer, followed by test flights for No. 1 and 2 last month at Montreal (right above). Canadair employees (left above) turned out for demonstration. Ships are being manufactured for Royal Canadian Air Force.

GD

ASTRONAUTICS EDITION

GENERAL DYNAMICS NEWS

Vol. 14, No. 21 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 11, 1961

GD/Astro Products Featured This Week At New York Meet

The broad scope of General Dynamics/Astronautics research, achievements and capabilities are being demonstrated this week to scientific and military leaders from throughout the nation.

Upwards of 15,000 visitors to the American Rocket Society (ARS) convention in New York Coliseum, Oct. 9-15, are expected to view GD/Astronautics displays, study printed material, and actually take part in a space research problem.

In addition, GD/Astro scientists and engineers are featured prominently on the agenda of technical sessions which emphasize the convention's theme, "Space Flight Report to the Nation."

In GD/Astronautics' exhibit area on the Coliseum's second floor, visitors can view San Diego-developed electronic products including a solar tracker and GD/Astro's Azusa equipment. Tenth-scale models of Atlas-Mercury, Atlas-Centaur and Atlas-Agena are displayed along with a zero-gravity demonstration, and an exhibit featuring models of satellites currently in orbit.

Two GD/Astro exhibits permit visitor participation.

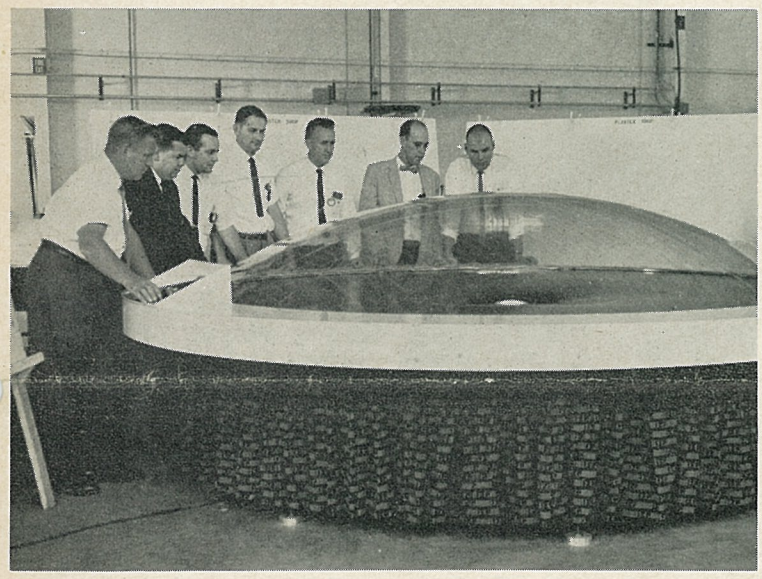
Intriguing and frustrating—to space-minded pin-ball players is one of these, known as a "gravity table."

A 10-foot diameter surface of

(Continued on Page 2)



PLANNING SESSION—W. H. Patterson, GD/Astro vice president-advanced product planning, discusses department organization with staff during orientation session held off-site recently.



SPACE GAME—Gravity table prepared for GD/Astro's exhibit for American Rocket Society convention in New York holds attention of some of many employees in many departments who played roles in its development and construction.

Club Boosters Named to Head Member Drive

General Dynamics/Astronautics Management Club today (Oct. 11) opens a one-month formal membership campaign, directed at introducing all eligible nonmembers to the broad range of club activities.

The search for new members is being handled through the club's "Booster" organization, with efforts coordinated by R. T. Bauman and D. K. Slingsby. Plans call for a "flyer" to be mailed to prospective members today.

All non-represented salaried employees and supervision are eligible for Management Club membership. Dues of $1.25 per month include the initiation fee, and subscriptions to Astro Leader, the GD/Astro club newspaper, and Manage, the National Management Association magazine.

"We feel Management Club membership has a great deal to offer the eligible employee," said Bauman. "He can form personal acquaintances at all levels of GD/Astronautics management; he is given a means for informal interchange of managerial concepts; and he can demonstrate his organizational ability through a variety of club activities."

Management Club Boosters throughout GD/Astronautics facilities can be recognized by a sign prominently displayed in their work areas. At Plant 71 and the support center, Boosters were briefed on goals of the membership campaign at meetings earlier this week, while a Booster meeting at Sycamore Canyon is slated tomorrow.

"All eligible GD/Astro employees are invited to investigate the advantages of Management Club membership by contacting the club Booster in their department," said Slingsby.

Brehm, Osborn Named To Patterson's Staff

Two major appointments within General Dynamics/Astronautics newly-organized advanced product planning (Dept. 105) have been announced by President J. R. Dempsey.

Reporting to W. H. Patterson, vice president-advanced product planning, they are W. K. Brehm, director of advanced product planning in the National Aeronautics and Space Administration (NASA) area, and Palmer Osborn, manager of marketing research and analysis.

They join J. J. Crowley and Bruce McKay, directors of advanced products for Air Force and current programs, respectively; J. W. Petre and J. S. Berggren, managers in these respective areas; and T. W. Wills, assistant to the vice president-advanced product planning, whose appointments were announced earlier.

Both Brehm and Osborn are veteran General Dynamics executives.

Brehm was formerly chief of operations analysis at GD/Astronautics, before assuming more recent duties as assistant to the vice president-planning, General Dynamics Corporation.

Osborn also joins GD/Astronautics from General Dynamics corporate office where, like Brehm, he was assistant to the vice president-planning. Before assuming those duties he held a post in operations analysis at GD/Convair.

Also named recently to advanced product planning posts are D. H. Digges, R. Stieler and J. R. Penland, all chiefs of management plans. Appointed chiefs of product planning are L. W. Gordy, M. H. Hansen, G. Lahey, and M. Redlinger. R. S. Korf has been named chief of sales planning.

Management Club Sets Hawaiian Dinner-Dance

A novel theme, casual or costume dress, and professional entertainment will be featured Oct. 28 when General Dynamics/Astronautics Management Club presents its "Hawaiian Halloween" dinner-dance at El Cortez Hotel.

Slated for the hotel's new Convention Hall, the dance is expected to attract the largest crowd in GD/Astro club's history. Some 1,200 persons can be accommodated.

A social hour begins at 7 p.m., with a luau-type buffet dinner served from 8 to 9:30 p.m. Dancing to music of Buster Carlson and his ARA band will continue from 9 until 1 a.m.

Intermission entertainment features a 45-minute floor show by a troupe of Polynesian dancers headlined by Tani Marsh. A $50 cash prize will be awarded the couple with the best costumes.

Tickets at $7 per couple are now available from all Management Club "Boosters." Controller and communication departments are sponsoring the event with John Spraker and Jim Mason heading the arrangements committee.

Daily Fire Drills to Emphasize Value of Prevention at Astro

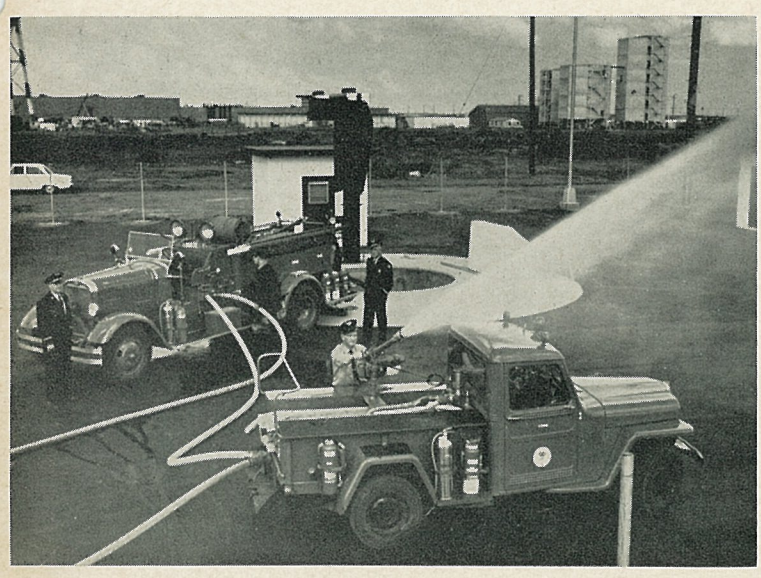
General Dynamics/Astronautics employees, through the efforts of the fire department, are taking part in National Fire Prevention Week (Oct. 8-14) now in progress.

Astronautics' fire department has scheduled a full week of activities, tailored to emphasize that the vast majority of fires, both at work and at home, are caused by ignorance or carelessness.

Fire fighting demonstrations, utilizing modern equipment, will be presented daily this week at 9 and 11:40 a.m., 1:40 and 2:10 p.m. They will be held at various locations around the main plant, materials building, Fordham Bldg., Point Loma and Plant 2.

As long as supplies last, special packets of "hand-out" fire safety information will be distributed. These include information on home and work safety, current information on nuclear

(Continued on Page 2)



FULLY READY—Special equipment such as jeep-mounted portable nozzle shown here with one of GD/Astro's two "pumpers" during test is ready for use by fire department. Observance of National Fire Prevention Week (Oct. 8-14) stresses making plant fire-safe.

Jim Morgan and Don Clark of Astro at Warren Fight Ranch Fire Successfully With Buckets

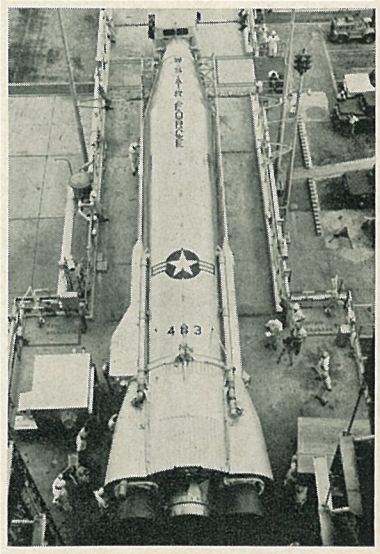
WARREN AFB — Two General Dynamics/Astronautics employees here recently found themselves playing unsuspected roles as volunteer fire fighters.

Jim Morgan, Dept. 537, and Don Clark, Dept. 322, were en route from Warren AFB to an outlying Atlas missile site when they spotted smoke rising from a building on the Three Bells Ranch.

They raced to the scene to find the owner's wife, Mrs. James Lawson, fighting a losing battle with a blaze which had razed one building and was spreading toward the house and other structures.

Carrying buckets of water from a well 100-feet distant, the GD/Astro men extinguished the building blaze, then turned to the grass fire with water-soaked burlap bags. All was under control when equipment from a volunteer fire department arrived at the ranch.

Clark and Morgan did a "double-take" at the sign on the fire engine door: it was from "Burns, Wyoming."



ON ARRIVAL—Atlas 25-E which last week (Oct. 2) was successfully launched on a 5,000-mile trip down Atlantic Missile Range, is shown upon arrival at Cape Canaveral Complex II.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Sept. 25.

Dept. 101, Data Processing: To data processing asst. supervisor, R. C. Bowes. To clerical asst. supervisor, A. W. Justus.

Dept. 124-0, Motion Pictures and Television: To asst. supervisor, H. I. Reavely.

Dept. 130, Industrial Relations: To professional and technical education supervisor, V. A. Martin. To guard chief, A. C. Gates.

Dept. 154-1, Resources Planning: To factory methods asst. supervisor, G. G. Preston.

Dept. 170-2, Office Services: To general supervisor, R. W. Kleinhans.

Dept. 220-3, Manufacturing Control: To manufacturing control foreman, C. E. Davis.

Dept. 322-8, Support Publications: To publications asst. supervisor, D. D. Clouse.

Dept. 324-1, Field and Service Engineering: To field engineering asst. supervisor, R. F. Schmidt.

Dept. 335-2, Service Parts: To support logistics asst. supervisor, C. E. Routh.

Dept. 337-3, Support Documentation: To parts documentation asst. supervisor, H. E. Vandenberg.

Dept. 343, Support Manufacturing Control: To GFE asst. supervisor, F. P. Burke. To manufacturing control asst. foreman, V. M. Garrison.

Dept. 344-2, Support Operations: To asst. foreman, W. M. Basile.

Dept. 350-3, Support Field Operations: To calibration analysis and control supervisor, G. W. Lucas. To support calibration group engineer, S. J. Rose.

Dept. 351, Field Modification: To field modification general supervisor, D. B. Sullivan. To asst. foreman, J. W. Arrington. To inspection supervisor, C. W. Derrick, F. B. Shockley. To support calibration group engineer, D. I. Harrison.

Dept. 480-0, Operations Planning and Methods: To factory methods supervisor, J. R. Couchois, W. F. Van Dusen.

Dept. 510-3, Engineering Department Management: To asst. project engineer, J. F. Carberry.

Design. 539, Design Liaison: To asst. design group engineer, F. F. Stanford, H. M. Williams.

Dept. 581-1, Advanced Systems: To asst. project engineer, W. F. Rector III.

Dept. 593-9, Reliability: To senior reliability group engineer, D. Krause.

Dept. 595-1, Development: To research group engineer, J. R. Transue.

Dept. 781-0, Electronics Manufacturing: To asst. foreman, D. A. George.

Dept. 814, Procurement: To purchasing agent, W. C. Buxton. To buying supervisor, E. L. Dierker.

Dept. 833-0, Stores and Traffic: To chief of stores and traffic, F. J. Parker.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch control supervisor, J. R. Gillilan. To production control asst. foreman—base, R. P. Miller. To head nurse, C. N. Wood. To asst. foreman, P. F. Black, S. G. Hughes, D. P. Neuenschwande.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To launch complex asst. supervisor, H. E. Stanley, F. M. Pannek. To activation engineering asst. supervisor—base, C. H. Steele. To sub-contract coordination asst. supervisor, R. Howland. To head nurse, R. R. Jones. To foreman, O. I. Jones. To asst. foreman, D. D. Arce, C. W. Maxfield.

FAIRCHILD AFB

Dept. 613, GD/Astronautics Operations: To activation engineering asst. supervisor—base, H. W. Burns.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To asst. foreman, W. J. Taylor, E. A. Beadleson, B. B. Beebe, J. E. Dulaney, J. C. Dunn, M. A. LaFrance, E. N. Martin, W. L. Mozingo, L. L. Phipps. To production planning asst. supervisor, G. M. Brower. To launch complex asst. supervisor, W. J. Hill Jr. To transportation asst. foreman, E. B. Kobza. To office services asst. supervisor, R. W. Kuenne.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To production control asst. foreman—base, E. I. Christensen. To inspection asst. supervisor, R. E. Larsson.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To asst. foreman, M. W. Freeman, E. E. Lawrence, W. C. Miller, L. C. Slaton. To activation engineering asst. supervisor—base, F. E. Scearce, W. B. Tagney.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To manufacturing control foreman, H. F. Massey. To production planning supervisor, J. M. Opocensky. To GFE asst. supervisor, C. A. Southard.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To inspection asst. supervisor, L. N. Trigg. To asst. foreman, J. G. Agnow, J. Todd.

Deaths

MAIN PLANT

HOWLAND—Warren Frank, Dept. 535-7. Died Oct. 1. Survived by wife, Margaret.

ALTUS AFB

MILLIGAN—George E., Dept. 617-7. Died Sept. 21. Survived by wife, Lavayne; daughter. Ann; son, Dan.

VANDENBERG AFB

ABNEY—Charles Toy, Dept. 576-3. Died Sept. 21. Survived by wife.

Service Emblems

MAIN PLANT

Service emblems due during the period Oct. 1 through Oct. 15.

Twenty-five-year: Dept. 220-4, D. F. Pearse; Dept. 290-2, K. G. Clarke; Dept. 731-0, W. T. Herchold.

Twenty-year: Dept. 604-0, G. M. Loudermilk; Dept. 606-0, D. E. B. Nuttall; Dept. 756-0, W. C. Cockerell, A. L. Kelso; Dept. 771-0, E. H. Hughes.

Fifteen-year: Dept. 184-0, C. C. Harper Jr.; Dept. 250-1, C. J. Lewis Jr.; Dept. 300-0, K. R. Aiken Sr.; Dept. 401-2, M. S. Brombach; Dept. 531-2, A. W. Koenig; Dept. 606-0, W. M. Wohlwend; Dept. 731-0, G. A. Vance.

Ten-year: Dept. 101-1, D. R. Brown; Dept. 120-7, E. M. Gooley; Dept. 130-6, J. A. Lakin; Dept. 250-3, R. E. Volle; Dept. 331-1, A. G. McCullough; Dept. 335-3, J. D. Gowin; Dept. 402-1, G. T. Freeman; Dept. 452-0, Joseph Pavlas; Dept. 535-5, D. L. Gray; Dept. 539-2, A. E. Munson; Dept. 551-3, W. D. Buniger; Dept. 576-6, J. P. Vawter; Dept. 707-1, E. J. Wolf; Dept. 831-0, Jeraldine A. Myers.

AFMTC

Ten-year: Dept. 571-0, K. E. Newton, J. N. Remissong.

DYESS AFB

Ten-year: Dept. 618-7, R. J. Finstad.

EDWARDS RS

Fifteen-year: Dept. 575-4, J. F. Ferguson.

Ten-year: Dept. 575-3, E. A. Peet.

FORBES AFB

Fifteen-year: Dept. 614, C. L. Parker Jr., O. C. Scott.

LINCOLN AFB

Twenty-year: Dept. 616-2, A. G. Eiland.

WALKER AFB

Ten-year: Dept. 619-7, H. F. Hall.

Births

MAIN PLANT

BEALS—Daughter, Cheryl Ann, 11 lbs., 1 oz., born Sept. 8 to Mr. and Mrs. B. A. Beals, Dept. 331.

LINCOLN AFB

VAKOC—Son, Rodney Dean, 7 lbs., 9 oz., born Aug. 25 to Mr. and Mrs. R. D. Vakoc, Dept. 616.

SCHILLING AFB

DEITZ—Daughter, Jana Kay, 6 lbs., 9 oz., born Sept. 26 to Mr. and Mrs. Rodney Deitz, Dept. 615-8.

MACY—Son, Charles R. Jr., 7 lbs., 15 oz., born Sept. 13 to Mr. and Mrs. Charles R. Macy, Dept. 615-9.

Fire Drills Held All Week

(Continued from Page 1)

fallout and tips on what to do in emergencies.

A continuous motion picture on fire safety will be shown during lunch periods at the fire station, Bldg. 6. Employees are invited to attend and also to see a special display.

Fire department and safety inspectors will make special checks in all plant areas throughout the week to focus attention on safety.

Astronautics also plans to play a major role in observance of the week outside the plant. Guest officials will view a demonstration of liquid oxygen and hydrogen peroxide conducted by Cyril Leigh-Smith of Astro educational services. Special plant tours will be conducted for the visitors.

Television, radio and newspaper coverage of Astronautics' part in the national observance will be featured locally and nationally.

National Fire Prevention Week is being observed in conjunction with the anniversary of the great Chicago fire of 1871 which caused damage of $168 million.

Every six weeks an estimated $168 million loss is attributed to fire in the United States.

Every day fire destroys or damages an average of 1,525 homes, 105 industrial plants, 149 stores, 11 churches, 11 schools and four hospitals. Annual loss of life attributed to fires is 11,500.

"These facts again emphasize the constant need for greater attention to fire safety," said W. E. Bowman, manager of industrial security. "We hope our part in this observance will help employees realize the dangers and act accordingly."



QUARTER CENTURY—L. G. Granstedt, chief tool engineer, Dept. 400-00 (right), and Michael Brooks, Dept. 181-0, are latest GD/Astronautics men to receive 25-year service pins from Mort Rosenbaum, executive vice president at GD/Astro.

Project Mercury Capsule on Display

The Project Mercury capsule used for the United States' first orbital flight around the earth, is being displayed in GD/Astronautics Bldg. 2 reception center through Oct. 16.

The NASA space craft was sent here for technical examination by GD/Astro engineers involved in the Atlas-Mercury program.

Astro Products In Limelight

(Continued from Page 1)

special plastic, precision-contoured with the assistance of electronic computers simulates the reach of space between a miniature plastic "earth" (in the table's center) and the "moon," orbiting with exact speed (at the perimeter).

Visitors are invited to "launch" a steel spherical "satellite" from earth at the proper time to hit the moon. The problem is complicated by conical depressions in the table surface, scientifically simulating gravity fields.

A second visitor-participation display is actually being used to collect data for GD/Astronautics human factors research.

This is a pair of mechanical devices serving as "robot psychologists." They measure the efficiency level of individuals operating them during problems testing reaction to continuous stimuli.

At a luncheon program tomorrow (Oct. 12), J. R. Dempsey, GD/Astronautics president, and a member of the ARS committee in charge of the convention, will serve as toastmaster. Principal speaker at this session is Lt. Gen. Bernard A. Schreiver of Air Force Systems Command.

Also taking part in the program is Krafft Ehricke, GD/Astro program director—Centaur, who joins a panel of other distinguished space flight experts for a space vehicle report.

A paper on "Thermal Control of Manned Space Vehicles" by Charles C. Love Jr., will be presented during a session on space hazards control, and Robert S. Shorey will discuss launch problems. J. H. Guill, B. Thompson and H. E. Radd will speak on "Solar Monitor—A Nuclear Rocket Mission," and Radd and I. J. Deane will discuss development programs, flight operations and facilities for nuclear rockets. Neil W. O'Rourke will speak on selection of upper stage propulsion systems for space vehicles.

Members of ARS Technical Committee include Eugene Lally (guidance and control); W. T. Radcliffe (liquid rockets), W. H. Dorrance (chairman, hypersonics), and C. E. Chapman (ram jets), all of GD/Astro.

Ryan Co. 'Flex-Wing' Topic at SAE Meet

San Diego Chapter, Society of Automotive Engineers, will meet at Midway Chuck Wagon, Oct. 17. Social hour begins at 6:30, with dinner at 7:30 p.m.

Speaker is H. C. Cotton, manager of advanced flight systems for Ryan Aeronautical Co., who will discuss that company's "Flex-Wing" design.

Plattsburgh Fans Watch Roger Maris

PLATTSBURGH AFB — Forty from General Dynamics/Astronautics operations here recently organized a group bus trip to Boston for a Red Sox-Yankee baseball game.

The trip was arranged by H. C. Hackett, T. C. Sullivan, E. W. Eckard and B. C. Noah.

Transparent Pipes Installed For Plumbing in Laboratories

Some 875 feet of glass piping—a complete drain system — now being installed at General Dynamics/Astronautics, is believed to be the first installation of its kind in the San Diego area.

Plant engineering (Dept. 250) is using the transparent glass pipe to replace the drain system for engineering test laboratories in GD/Astro's Bldg. 4.

Affected are chemical analysis, infrared spectrophotometry, vacuum fusion and fungus, and nondestructive test laboratories (all Dept. 563-1), and the plastics research lab (Dept. 592-1).

Previously, drain lines from these areas were of the usual cast-iron piping, which, over a period of time, were badly corroded by solutions.

In considering replacement, designers sought a plumbing material which would be unaffected by chemicals. The new "Pyrex" glass piping is corrosion-proof and no more expensive than conventional material. For added protection, an automatic flushing system each hour will pour fresh water through system. Pipes empty into a dilution sump before entering sewer lines.

In addition to plumbing replacement, the project includes work on lab floors, renewed floor coverings, and construction of concrete bases for counters. All work has been scheduled to disrupt lab routines as little as possible.

Key figures in planning the project include H. G. Comstock and H. C. Ballard, construction engineers; R. G. Grimshaw and D. E. Merriam, assistant supervisors, all Dept. 250-2.

Actual plumbing is being accomplished by Dept. 250-3 employees headed by Gene Schutz, assistant foreman.



"PICTURE-WINDOW"—T. W. Mears of GD/Astro, top, tightens connection on new glass plumbing while Frances Abolins, material test group, and H. G. Comstock, construction engineer, examine types of fittings.

'CONVAIR ASTRO' OUT; BUT STILL USEFUL

When General Dynamics/Astronautics gained full division status recently, a supply of standard legal-size (No. 10) envelopes printed with the former "Convair Astronautics" name became obsolete.

Now these envelopes will be reissued for use with mail between various GD/Astronautics operations (for example, between Plant 71 and base activation sites throughout the country), after a neat over-printing job by graphic reproduction (Dept. 123-0).

The old envelopes are now marked "Intra Division Mail Only," and will not be used for correspondence outside the division.

The envelopes are available from Group 31 Stores, where they are listed as material number 809035, part number "Envelope 1010-10."

Ehricke Helps Edit Space Flight Text

Krafft A. Ehricke, General Dynamics/Astronautics program director-Centaur, is a member of the editorial board which prepared a new space flight textbook just published.

Entitled "A Handbook of Astronautical Engineering," the book was a three-year project for 150 leading space authorities representing government agencies, industry and universities.

Pre-retirement Counseling Started For All Astro People Nearing 65

A comprehensive program of retirement planning for General Dynamics/Astronautics employees approaching age 65 has been announced by Keith A. Sears, employee services supervisor (Dept. 130-5).

The program, which offers individual and group planning sessions, begins approximately three years before the employee reaches retirement age.

It will cover such factors as income planning, medical problems, and personal adjustment to increased leisure time.

"A few months before reaching age 62, the employee will be contacted and asked to arrange an interview appointment with me," Sears explained. "I will meet with him personally twice or three times a year to discuss any problems he can anticipate, and offer any assistance possible."

Personal interviews will be interspersed with a series of group meetings at which experts in fields of social security, investments, and similar subjects will discuss their specialties.

Employees anticipating retirement in the near future may contact Sears at ext. 1111.



ANSWER MAN—In personal interviews with Keith Sears, employee services supervisor, employees are helped to evaluate approaching retirement realistically and are provided with information toward this end.

General Dynamics NEWS

Successor to "Convairiety," West Coast and Texas editions of the NEWS are published bi-weekly by General Dynamics with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, Telephone CYpress 6-6611, ext. 1071, Logan Jenkins, editor-in-chief.

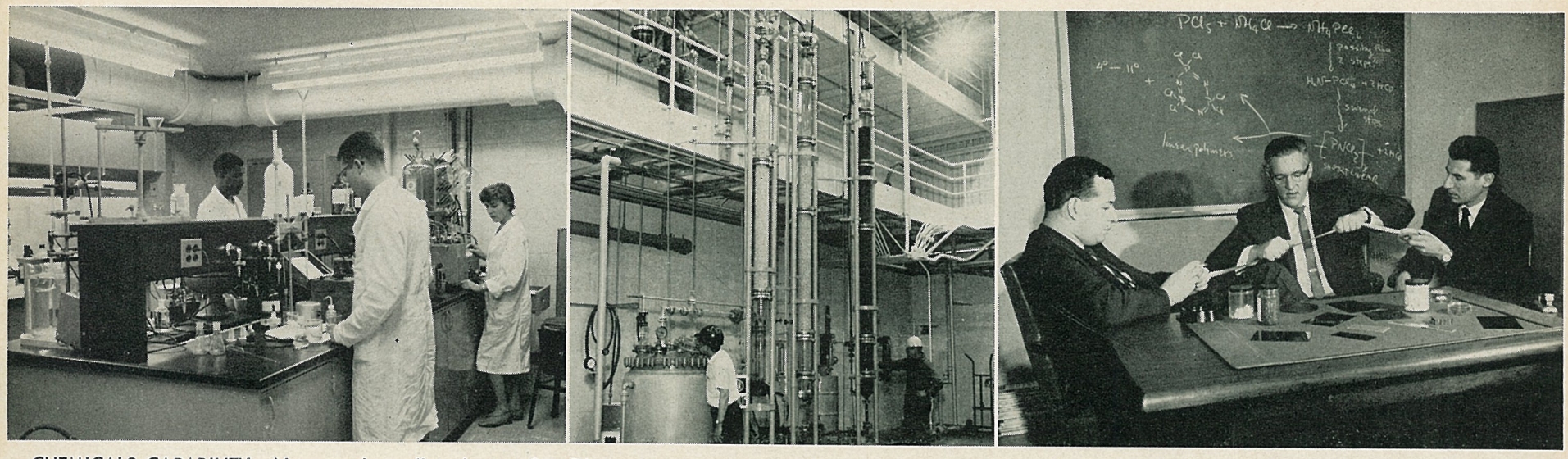
Approximate current total circulation, over 70,000.

Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRowning 7-8900, ext. 3322. Staff: Bryan Weickersheimmer, news editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton, Jeff Fishel.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, news editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., news editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.



CHEMICALS CAPABILITY—New, modern pilot plant at San Diego seaplane ramp is home of Chemicals Section of General Dynamics Advanced Products Department, formerly known as "Project X." At left in analytical research and quality control area are Thurman Gillis, Roy Norman, Dusa Cvjetkovic. Center photo shows Don Oncale (on catwalk), Sergio Cabinum and Ray Kingman. At right are Dr. Lloyd Kaplan, chief of chemical research and development; Dr. Rip G. Rice, technical director of section; and Leo Zuckerman, chief of chemical engineering and production.

Market Development Stage Approaching For GD's 'Project X'

A hitherto unpublicized chemical research program, known for two years only as "Convair Project X" and now organized as the Chemicals Section of the Advanced Products Department of General Dynamics, has reached the market development stage.

The program has been kept "under wraps" for some 2½ years because this chemical discovery was capable of being patented and time was needed to protect GD's proprietary position and file the necessary patent applications both domestically and abroad.

Only recently grouped directly into GD's Advanced Products Department, the project was given a sharp spur forward earlier this year when most of the personnel were moved into a new and versatile chemical pilot plant located at the GD/Convair SD ramp.

The Chemicals Section was born when a chemical reaction was discovered by which a variety of resinous chemical intermediates could be developed having high-temperature properties up to 1,000 F.!

Says Dr. Rip G. Rice, who along with Robert L. Riley, was investigating chemistry dealing with the high-temperature materials at the time:

"As is the case with so many chemical discoveries, the reaction came about almost accidentally. A particular chemical raw material had been known for years, but was something of a laboratory curiosity. We discovered this interesting compound could be reacted to produce new chemicals with exceptional high-temperature properties."

Both of the co-discoverers are still in the GD family. Rice is technical director of the Chemicals Section of Advanced Products Department and Riley is continuing his work at the Scientific Research Laboratory.

"AP-Resin-XHU, formerly called Formula X, a light, powdery solid, is one of the intermediates developed from the chemical reaction," explains Dr. Rice. "It was a completely new discovery with commercially feasible applications."

In May of 1959, Rice and five associates moved into a special laboratory facility at 3462 Hancock St. in San Diego. By the end of the year they had developed a 20-gallon synthesis of AP-Resin-XHU.

Product development of AP-Resin-XHU with its high-temperature applications was pursued with the following results: as a solid it was made into coatings such as varnish; it was molded under high temperatures; it was impregnated on fiber reinforcements and made into laminates.

The chemical was blended with other high-temperature resins to make structural adhesives, electrical insulations and flexible and rigid foams.

Now in their new pilot plant at the SD ramp, Dr. Rice and his group (now numbering some 24 persons) will be able to produce enough of the resin to make marketing operations feasible.

Dr. Rice expects to have two products on the market by the end of the year in addition to AP-Resin-XHU.

One will be "DYNALAK HU" which is a high-temperature varnish, primarily intended as a dip-coating for electronic components, but which also has other minor applications.

Another product, now termed "Vartex T-1092," a class F electrical insulation tape, will be marketed by the New Jersey Wood Finishing Co., Woodbridge, N. J., for wrapping parts of electrical motors to protect against corrosion, provide insulation and cut through resistance while operating at high temperatures.

Timewise, AP-Resin-XHU has been moving rapidly through the research and development stages. In the chemical laboratory a rule of thumb is "seven years from test tube to tank car," a cycle which may be shortened considerably in the present instance.

Dr. Rice points out that the new pilot plant (1,500 sq. ft.) provides a link between information and production. In the versatile facility, GD chemists and chemical engineers will be able to perform almost any known chemical unit process on a pilot scale.

In addition to GD research and development, outside chemical contract tasks will be actively sought for the modern pilot plant and its personnel.

The Chemicals Section, under Dr. Rice, is divided into four functions. Dr. Lloyd Kaplan directs chemical research and development, which includes five chemists and two technicians; product research and development is staffed by two senior chemists and two technicians; chemical engineering and production under Leo Zuckerman includes two chemical engineers, a foreman and several chemical operators. A market development group is under the direction of Dr. Thomas F. Banigan.

In addition to the Chemicals Section, Advanced Products Department encompasses a Mechanical Section, formerly known as Dynapak. R. G. Monsees is general manager of the department.

Reservists on Duty In Northern Africa

Two General Dynamics / Fort Worth men have been assigned to Port Lyautey, Morocco, in North Africa on a 14-day training cruise for U. S. Naval Air Reserve Transport Squadron 703.

They are Harold P. Cowan, Dept. 6-7, and Ruben Ramirez, Dept. 21-7. The squadron's mission will be to airlift passengers, mail and cargo throughout northern Africa and southern France.

Two New Successes Scored by Atlas E

CAPE CANAVERAL — Air Force and GD/Astro crews have scored two new successes with recent Atlas "E" series launches over the Atlantic Missile Range.

On Oct. 2, Atlas 25-E completed a programed 4,000-mile flight from Complex 11 here, while Oct. 4 saw Atlas 30-E, launched from Complex 13 follow a 9,000-mile flight path ending "on target" in the Indian Ocean.

Gen. Keeling to Speak To AFPRO Management

Next meeting of GD/Astronautics Air Force Plant Representative's Office (AFPRO) Management Club will be held Oct. 24 at the Marine Corps Recruit Depot Officers' Club, San Diego.

Guest speaker will be Brig. Gen. Gerald F. Keeling, Western Contract Management Region commander, who will discuss management of the Atlas missile and space programs.

Karel J. Bossart, GD/Astronautics technical director, addressed the club's September meeting. At that time, Charles Dvoracek of the AFPRO site activation division received the club's "Man-of-the-Month" award.

GD/FW Men Go To Active Duty

Fifty-one General Dynamics/Fort Worth employees are members of the recently activated 49th Armored Division.

The division is due to report to Fort Polk, near Leesville, La. about Oct. 15.

Employees, by department number, are:

Dept. 3-5, Charles D. Curry; Dept. 4, J. W. Jordan, J. V. McDonald, W. H. Moore.

Dept. 6, J. L. Baker, O. G. Burton, H. W. Coppinger, C. D. Gaddy, F. L. Harrison, G. H. Hayward Jr., B. O. McCauley, J. B. McGoodwin, T. J. Osborne, C. G. Pearcy, Calvin Postoak, J. W. Powell, J. L. Shen, D. R. Shirley, G. W. Wilson.

Dept. 14, P. K. Dorsey; Dept. 19, R. J. Ballard, J. L. Baldridge, G. W. Volkman Jr.

Dept. 20, L. W. Herring; Dept. 21, B. R. Burnett; Dept. 22, M. E. Byars, D. L. Little, J. E. Williamson.

Dept. 24, J. L. Tillery; Dept. 27, E. E. Farmer; Dept. 32, H. J. Harner.

Dept. 35, G. L. Botkin, L. M. Browder, J. W. Doty, A. W. Hovis, L. R. Leach, W. H. Long, R. W. Trimble; Dept. 37, W. H. Sellers.

Dept. 64, C. M. Sheldon, R. K. Treu, B. V. Whitehead; Dept. 65, Thurman Cannon; Dept. 75, K. D. Chaney.

Dept. 81, B. T. Cantwell, E. H. Draper, Noel McNiel, T. L. Neely, C. M. Peters Jr.

Dept. 82, R. L. Jones Jr.; Dept. 85, B. E. Weatherby.

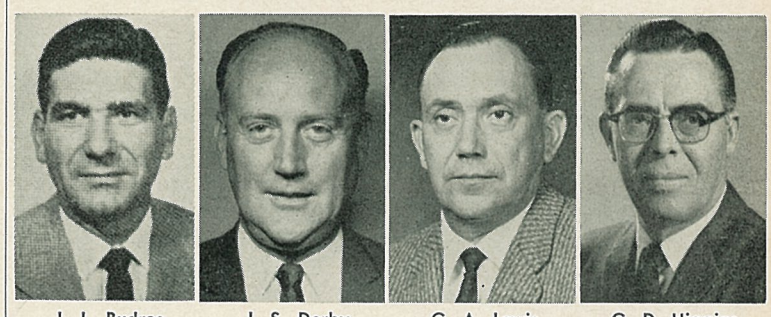
Erickson to Speak For IAS Section

B. A. Erickson, chief of projects, General Dynamics/Fort Worth, will speak Friday before the Texas Section, Institute of Aerospace Sciences, Inc., in Ridglea Bowl Restaurant.

He will talk on "Aviation: Yesterday, Today, Tomorrow and Beyond." GD/FW will host a social hour starting at 7 p.m. Erickson's talk will follow an 8 p.m. dinner.

Two GD/FW men are officers in the section. V. G. Polovkas is vice-chairman and J. D. Barnard is treasurer. Both are in Dept. 6.

Dynamics Ind. Relations Staff Members Named



J. L. Budros J. S. Derby G. A. Lewis G. D. Higgins

(News stories, similar to the following, reporting organizational alignments in other corporate departments, will be carried in subsequent issues of General Dynamics NEWS.)

Staff appointments, including the new position of director of labor relations, were announced this week by R. H. Biron, senior vice president-industrial relations.

Assignments, some of them new in title only, include J. L. Budros as director of personnel administration; J. S. Derby as director of labor relations; G. D. Higgins as director of industrial security; G. A. Lewis as director of organization and compensation.

Reporting to Lewis are E. C. McManus as manager of employee benefits; G. C. Spencer as manager of wage and salary administration; and A. C. Crum, executive assistant.

Reporting to Budros are C. M. Barlow, personnel manager (New York); H. T. Brooks, manager of personnel placement; R. B. Craig, manager of personnel services; and R. I. Morse, manager of office services (San Diego).

All have been with General Dynamics for a matter of years except Derby, who joined last month after four years in a similar position for Alco Products, Inc., Schenectady, N. Y. Previously he was director of industrial relations for Baldwin Lima Hamilton Co. Born in Lawrence, Mass., he holds degrees from Villanova University.

Budros has been with the company since 1942, joining at San Diego as safety engineer. He held other industrial relations posts before transferring to Fort Worth in 1948 to head the safety office and later the labor relations section. In 1953 he became personnel manager and in 1960 was moved to Biron's staff in San Diego. He graduated from San Jose State College and did graduate work at Stanford.

Higgins, educated at UCLA, is a veteran of Vultee Field and Stinson divisions (chief of industrial relations) and transferred to Fort Worth in 1948 as assistant industrial relations manager. He was named manager of industrial security for the division in 1951 and in late 1952 was transferred to Biron's staff as director of industrial security for the then Convair divisions.

Lewis, a Portland, Ore. native, took his degree at University of California in mathematics and economics and joined Vultee Field in 1942, transferring to San Diego in 1944. He has been assistant to Biron, specializing in organization and compensation, for more than ten years.

McManus was born in Kingston, N. Y. and took his degree at Holy Cross. Following Army service (1941-1947 in Quartermasters' Corps overseas and in Washington, D. C., a major) he took his master's degree in business administration at Harvard. He was with Philco Corp. and Ford Motor Co. before joining General Dynamics in 1956 in personnel services.

Spencer, a native of Greenville, N. J., was educated in San Diego, and at UCLA specialized in labor legislation and personnel management. He joined Convair in 1939 in shop departments, later transferring to industrial relations in wage and salary posts. He headed wage and salary for Pomona Division for a number of years before transferring to General Office in 1956.

Crum, from Marshall County, Ind., is a graduate of Western Michigan College at Kalamazoo and was with Michigan Bell Telephone before joining the Air Corps in 1940. After a period in Convair personnel office at San Diego he was recalled by the Air Corps and served until release as a captain in 1945. Returning to Convair industrial relations he transferred to General Office in 1950.

Barlow has been with General Dynamics since 1956 as coordinator of educational programs. Before that he was with Union Carbide Co. for 14 years, latterly as college recruiting coordinator. A Yale University graduate with a master's from Columbia, Barlow has administered various corporation recruitment, training and financial aid programs.

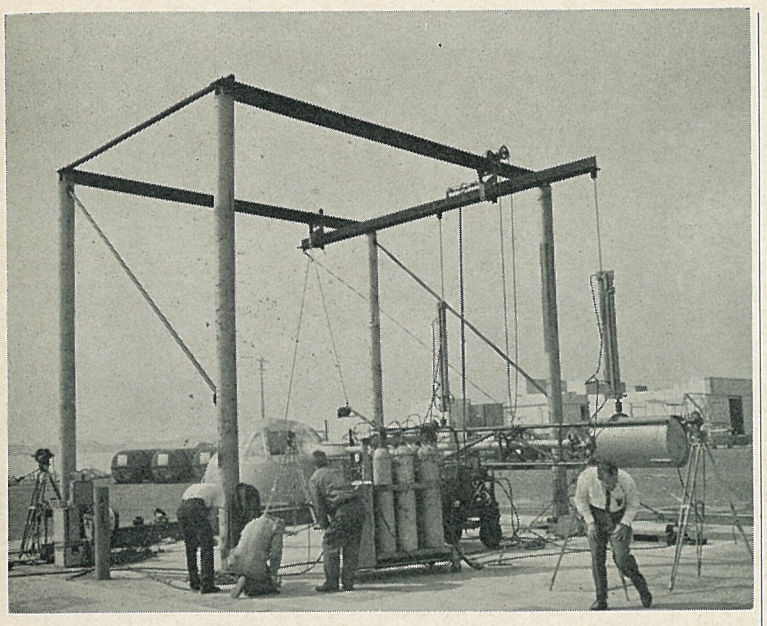
Brooks, born in Chicago and educated at University of Michigan, joined the company at San Diego in 1945 in industrial relations. By 1948 he was engineering personnel administrator and later in charge of executive de-

(Continued on Page 4)

Veterans of Vultee To Meet Oct. 21-22

Vultee Field veterans from throughout the country will gather at Town and Country Hotel Oct. 21-22 for the group's 14th annual reunion.

Wes Magnuson, GD/Astro, heading the arrangements committee, said a full round of events, including a luau dinner and a fashion show for wives, has been planned.



IMPACT!—Jerry Green, Earl Moore, Lyle Minkler, Bob Koser scatter for cover during impact tests on CL-44 windshield at San Diego testing site to prove resistance to flying objects.

Dummies' Shirts Remain 'Clean' In CL-44 Windshield Checkouts

Two sister divisions of General Dynamics Corporation have joined forces in developing design for the safest cockpit windshield they can evolve.

A Canadair Limited CL-44 cockpit has just finished punishment in GD/Convair's structures test lab in a series of impact checkouts. The windshield, made by Libby-Owens-Ford to original Canadair - Convair specifications, showed it could stand up under direct hits from flying objects without shattering on the pilots.

"The windshield is a 'double-decker,'" explained L. F. Minkler, Dept. 68 test engineer on the project. "It is made of three layers of glass with vinyl in between. It has a built-in defrosting system with electric conductive coating between the vinyl and glass."

Tests, completed the first of this month, were follow-on to a series which stretched over three months last summer at the San Diego ramp test site. At that time the cockpit was tested for impact resistance in the pilots' area with the windshield heated to 100 degrees F. Speed simulated approximately 320 miles per hour, cruise velocity of the turboprop transport at sea level.

Dummy styrofoam pilots within the cockpit, dressed in white shirts, received only a sprinkling of small glass chips (known as "spalling") which would not be hazardous to a human, said Minkler.

Besides the white shirts, which are marked with black from carbon paint beneath whenever hit by glass, dummies wear safety glasses with one lens in and one out. This shows what damage, if any, glass particles would do to pilots' eyes, with or without glasses.

This year's final test was a "cold shoot." The windshield was chilled to 20-30 degrees F. by passing gaseous carbon dioxide over it within an enclosed chamber. It "soaked" for an hour in the chilly temperature before shooting began.

Minkler, who had charge of the testing under A. R. Vollmecke, assistant group engineer, said that a cold windshield is much more likely to shatter than when heated. Warm vinyl stretches to "give" when hit by an object.

However, final testing showed dummies' shirts unmarked by flying fragments to give the windshield design a clear slate.



ARTIST—Jim House, GD/FW engineering supervisor, substitutes acetylene torch and scrap steel for paint and canvas.

Novelty

Sculptor Uses Welding Torch

Jim House, General Dynamics/Fort Worth engineering supervisor, substitutes an acetylene welding torch and scrap steel for the usual tools of an artist—and wins prizes at art exhibitions.

House is a sculptor in steel in his spare time.

Working in a completely equipped "studio" at his Lake Worth home, House first began cutting art forms from scrap steel only two years ago.

One of his first efforts, which he dubbed "Street Fighter," took second place in statewide competition of the Texas Fine Arts Association the same year.

House "sculpts in steel" without the aid of preliminary sketching or drafting. His works vary from abstract pieces to easily recognizable figurines in a Western theme: a cowboy with lariat, or a steer rider.

House concentrates on form and balance rather than symbolism. He says he works "just from feel." Most of his figurines are about two feet tall, weighing an average of from eight to 10 pounds each. He works with steel varying from one-fourth-inch rod to one-half-inch plate.

House's main tools are his torch, saws, hammers, pliers, drills, buffers, grinders.

GD/Astro Engineers To Present Papers For Stress Society

Two senior research engineers from General Dynamics/Astronautics will give papers at tomorrow's (Oct. 12) meeting of the Southwest Chapter of the Society for Experimental Stress Analysis in Los Angeles.

J. L. Christian will talk on "Properties of Aerospace Vehicle Materials at Cryogenic Temperatures," and C. K. Perkins' speech is titled, "Effect of Zero-Gravity on Cryogenic Liquids."

Other General Dynamics men attending the meeting will be C. R. Smith, A. R. Vollmecke, and G. D. Lindeneau of GD/Convair structures lab. Smith is Southwest section program chairman and Vollmecke and Lindeneau are members of the planning committee.

Fifty Enter Pilot Program In Business Systems Mgt.

Fifty forward-looking General Dynamics/Convair persons have entered the pilot "Business Systems Management" program, called the first of its kind sponsored by a West Coast company.

Designed to keep abreast of the constantly-increasing technical advances in today's "computer revolution," and to expand knowledge of all persons handling facets of the company's business systems, the course is offered through cooperation with Cal-Western University.

"There is a very definite need of such a training program, especially with the giant strides in electronic computing systems—which now automatically process data into information necessary for successful operation of any large company," W. E. Newton, GD/Convair educational services coordinator, said.

"Optimum business systems refinement and efficient utilization of electronic data processing systems, no matter how advanced, depend upon the human element."

The certificate program requires 42-semester units of college-level work, with classes held at Cal-Western, GD/Convair and San Diego City College in the evenings. It is open to all eligible General Dynamics computer programer or business systems personnel in San Diego.

Enrollment is open now for the second semester beginning February. Applications of eligible flat-salaried persons are accepted by Newton, ext. 2166, or R. H. Nall, educational services, ext. 2568, both GD/Convair, Plant 1.

Dynamics Ind. Rel. Staff Appointed

(Continued from Page 3)

velopment. Prior to joining Convair he was management consultant and personnel manager for mid-Western companies.

Craig joined at Fort Worth first in 1946. He left the company for a period, returning in 1948 as instructor in educational services and by 1951 was educational services supervisor. He became wage and salary administrator in 1953 and held this post before being transferred to San Diego this summer. He attended Texas A & M and served in the U.S. Army.

Morse, born in Bellingham, Wash., attended Carleton College in Northfield, Minn. and joined Consolidated in 1936. He held various factory supervisory posts and in 1943 was assistant division manager at New Orleans. He later held a number of posts in material and purchasing and served a three year period as district expediting supervisor in Newark, N. J. He has been manager of office services at San Diego since 1957.

Family Piles Up Century at GD

A total 94 years' service at General Dynamics divisions was recorded recently by one family when D. Paul Bender, GD/Astro field engineering supervisor (Dept. 324) received his 20-year pin.

His father, Homer M. Bender, is employed at GD/Electronics, while three brothers are long-time GD/Convair employees.

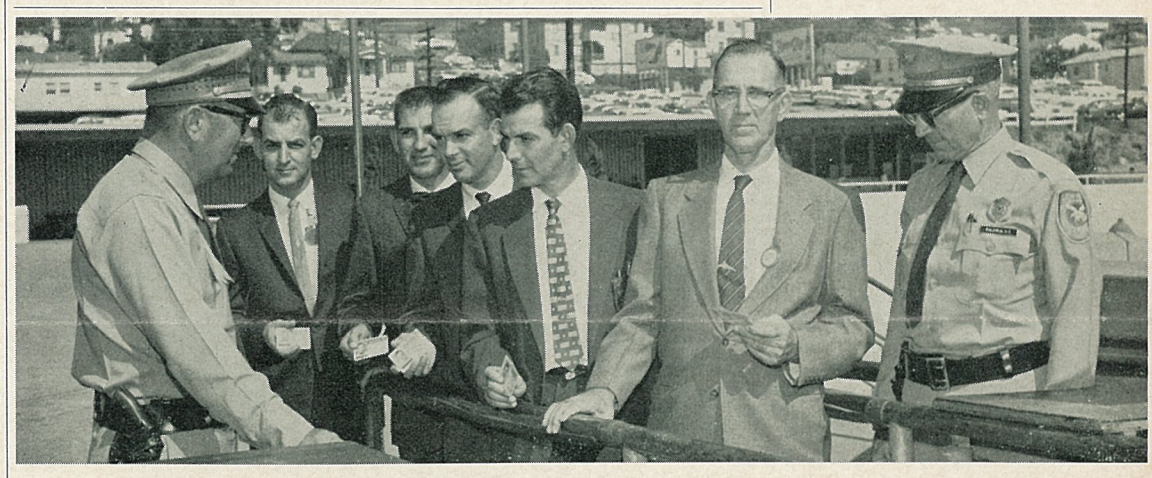
The senior Bender lists 12 years with the company, with 11 at GD/Convair before transferring to GD/Electronics Dept. 7 last year.

Wade M. Bender, GD/Convair Dept. 137, has 21 years' service; Homer B. lists 22 years and is in Dept. 123; while Frank S., Dept. 31, is a veteran of 19-years' standing. All are assistant foremen.

Paul is the "best-traveled" of the group. Like the rest of the family, he started at GD/Convair; spent two years at GD/Fort Worth; another year at GD/Convair; three years at GD/Pomona; and reported to GD/Astronautics in 1956.

An even dozen youngsters call the senior Bender "grandfather" now. Paul has three children, Wade three, Homer has four, and Frank two.

"The families always get together at Christmas," Paul remarked. "As you'd expect, there's a lot of lively conversation, with five of us 'talking shop.'"



WHAT'S THAT NAME?—Guards C. K. Hancock and D. T. Baldwin do "double take" as father and four sons enter plant. Homer M. Bender, GD/Electronics, Dept. 7, leads parade, followed by sons, Homer B., GD/Convair Dept. 123; Wade M., Dept. 137; D. Paul, GD/Astro Dept. 324, and Frank S., GD/Convair Dept. 31.

Engine Blasts From Convair Jet Transports Bounce Off New-Type Steel Deflectors

Jet engine blasts of Convair jet transports are bouncing off strong steel backboards, installed at two field operations locations at General Dynamics / Convair this summer.

The 120-ft.-long steel blast deflectors replace wooden fences which had served as blast walls throughout the propellor transport era at the San Diego plant. R. E. Dennington of GD/Convair facilities engineering said that the wooden structures couldn't stand up to full force of jet engine blasts, and, in time, might prove dangerous if they broke up during engine test runs.

Enough steel panels, 2½-feet wide and 12-feet high, were ordered in early summer from Special Products Division of Sremco, Chicago, Ill., to construct solid blast deflectors for four Convair jet 880s or 990s. Single sections stretch along north side of pits 1A and 1B and a back-to-back wall at pits 10 and 11. They can withstand 150 lbs. of pressure per square foot.

When they arrived at the plant they were solid steel, except for two rows of holes drilled along the lower edge. These holes vent the back side of the wall and prevent a back pressure from forming which would cause uplifting of the fence.

However, Dennington said that trials showed that extreme blast forces might eventually warp the steel. So, to relieve the pressure, geometric patterns of 3-in. half circles were punched (burned by torch first, then hammered back) in direct path of engine blasts.

"By bending back lips of the half-circles, direct pressure blast on the wall is reduced and exhaust gases are still deflected upward," explained Dennington. "Result of the rework was apparent in reduction of excessive wall deflection and vibration."

All sections are bolted solidly together — panel to panel — then into concrete foundation and to steel frames and supports erected by plant engineering.

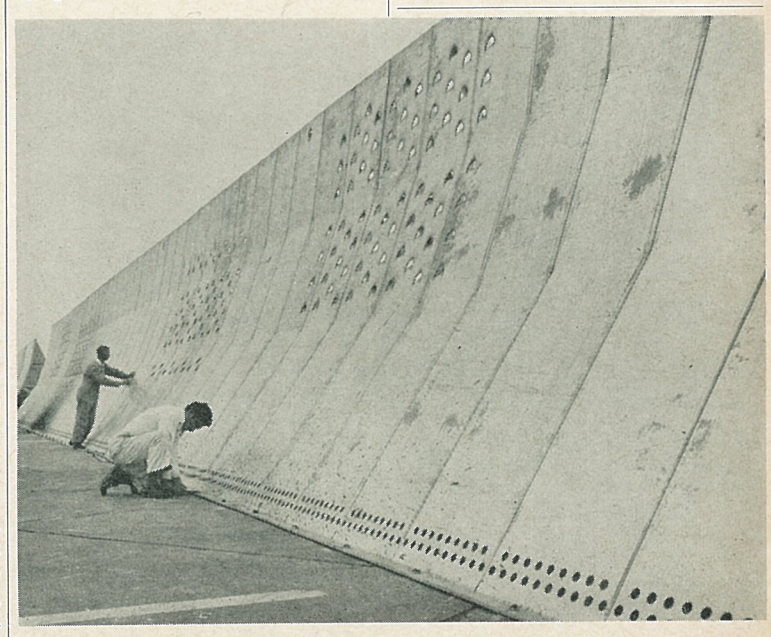
Save Material — Don't Throw Your Job Away!

Hustler 'Cover Girl' For AF's Journal

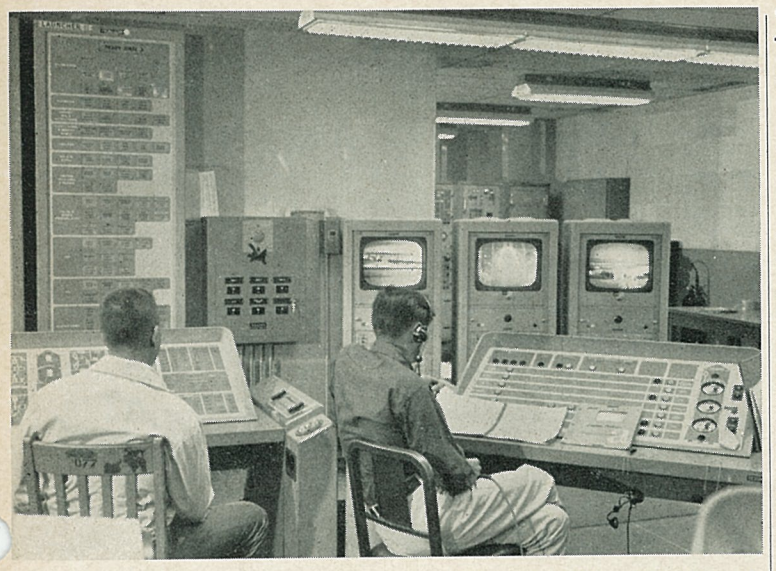
A B-58 Hustler is "cover girl" for October's "The Airman," official journal of the Air Force.

And the record-breaking feats of 43rd Bomb Wing crewmen in B-58s are chronicled in some detail in Dave Karten's full-length feature article, "Hustler."

"Until the . . . B-70 bomber becomes operational, the B-58 will remain the USAF's only supersonic bomber," the article says. "It is a reliable, effective weapon system manned by some of the world's most experienced airmen —a powerful deterrent to armed aggression."



STRONG BARRIER—E. E. Quick and Don Herrera, both of Dept. 171 at GD/Convair, tighten bolts in recently-installed steel blast deflectors at field operations pits. Notice pattern of half-circles punched in direct path of engine blasts to relieve force on walls.



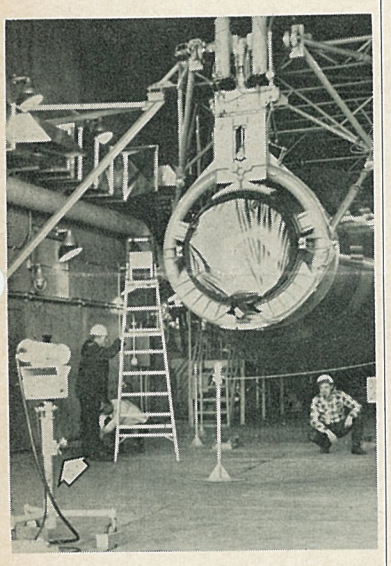
EXTRA EYES—Television monitors positioned within Atlas launch operations building give missile crew close-up views of all phases of test operations.

Atlas Launch Areas Scanned By TV to Keep Eye on Activity

Meters and gauges are invaluable for elaborate missile tests and operations, but for real "believing," "seeing" is still one of the missileman's most reliable guides.

Since early last year, General Dynamics/Astronautics motion pictures and television (Dept. 124) has provided missile crews with "extra eyes" by setting up portable closed-circuit television units at Atlas ICBM sites throughout the country.

Although installations vary, GD/Astro crews usually mount one camera permanently, and lay some 1,100 feet of camera, utility and lighting cable at each site. Other cameras may be shifted from complex to complex as required.



IN PLACE—Television camera (arrow) is set up in "coffin" launch complex as GD/Astro crew readies missile.

Teams of GD/Astro television specialists, all reporting to L. E. Steadman, television supervisor at San Diego, are on the job at Fairchild AFB, Wash., Warren AFB, Wyo., and Schilling AFB, Kan.

During fueling, crew procedures training and other tests, three to four cameras with special lighting units located throughout the launching area are focused on the missile and its associated equipment.

What the cameras "see" is displayed on three television monitors inside the launch operations building (LOB).

"Using remote control units, crewmen in the LOB can 'pan' and 'tilt' cameras as desired to scan the entire launch area," Steadman explained.

On several occasions, problems have been avoided because television helped crews spot faulty connections, leaks and other malfunctions in time to permit corrective action.

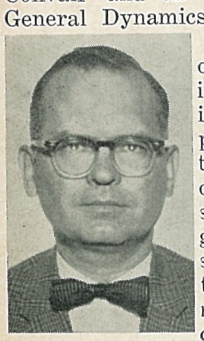
The 18 mobile units installed at Atlas "E" series complexes to date have proven so successful that television soon will become a permanent feature of all Atlas sites in this series.

GD/Astro will provide technical coordination and direction.

General Dynamics Specialists Speak at International Seminar

Two General Dynamics Corporation specialists will be among United States representatives at an international seminar in England this week.

Invited to give papers at the Technical Seminar on Infrared Guidance Techniques at Malvern, England, Oct. 9-13, are Romuald Anthony of General Dynamics/Convair and L. A. Jeffries of General Dynamics/Pomona.



Rom Anthony

They are two of 27 outstanding military and industry experts chosen by the Department of Defense, Research and Engineering Division, Washington, D. C., to represent this country. The Malvern meeting, on the site of the Royal Radar Establishment, is sponsored jointly by United Kingdom, Canada, and United States for exchange of technical information on infrared guidance development, and related fields.

Anthony, who heads infrared and optics activities at GD/Convair, will speak on "Observation of Infrared Horizon Gradients with Application to Orbiting Vehicles." In part, his paper deals with research at GD/Convair under the vertical rocket probe program for the Air Force.

"A Sandwich-Type Detector for Negative Contract Operations," is title of Jeffries' paper. G. W. Ashley was co-author. Jeffries is assistant supervisor of the GD/Pomona physics and infrared group. He was a former research assistant with Atomic Energy Commission's Ames Laboratory.

Anthony, who joined Convair in 1958, was a key figure in the first high-altitude solar research in the infrared in 1948 at Naval Ordnance Test Station, China Lake, Calif.



'Hand-Me-Down'

Construction of First Delta, '7002' Okayed in '46 on Low Budget Level

(Following is installment No. 69 in a continuing history of General Dynamics products of past.)

The only indicated disadvantage (of the delta wing) was poor lift/drag ratio at low speeds, and the Air Force in November, 1946, approved construction of a full-scale, 60-degree, delta-winged research craft with standard jet power plant, for evaluating the configuration.

To conserve research funds, the contract specified completion "in the shortest possible time, using available materials. No attempt shall be made to meet existing specifications . . . and existing parts from other airplanes shall be used where possible." (Engineers managed to work into the design the main landing gear from a JF-1, nose gear from a P-63, pilot's ejection seat from a YP-81, and other hand-me-downs.)

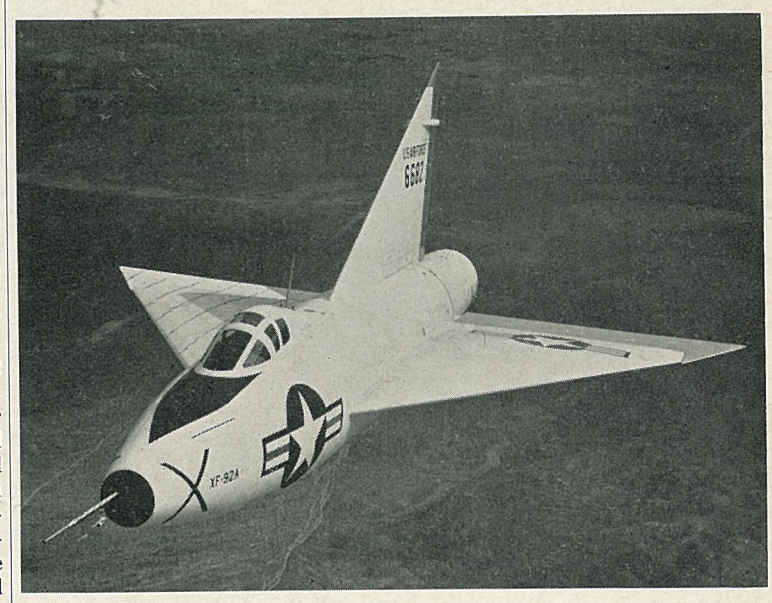
The model was designated 7002 (which happened to be the accounting department's work order number). After flight tests and acceptance, the Air Force called it XF-92A to distinguish it from the -92 ramjet project. The design evolved as a midwing monoplane with the engine air intake in the nose. The wing extended almost the length of the fuselage, requiring a radical change from conventional tail configurations. A triangle-shaped vertical fin was mounted, with rudder in the trailing edge. Functions of ailerons and elevators were combined in "elevons" set into the wing trailing edge.

Construction was well along when Vultee Field was closed in the summer of 1947, and the plane was completed less engine that fall at San Diego. In December it was shipped by Navy cargo vessel to San Francisco and trucked to the NACA Ames Aeronautical Laboratory, Moffett Field, for full-scale wind tunnel tests. These verified previous small-scale tests and the 7002 was returned to San Diego (thumbing a ride on the aircraft carrier Boxer).

In the post-war decade jet engine improvement seldom materialized as soon as airframe designers hoped. In 1945 it was anticipated that the G.E. I-40 or Pratt & Whitney Nene would offer thrust ratings of 7,000 or 8,000 pounds when 7002 was ready to fly. Instead, she was fitted with an Allison J33-A21 (nominal thrust 4,600 pounds) and taken to Muroc April 1, 1948. The engine lacked power and tests were limited to taxi runs on the 7-mile-long dry lake bed. Then an improved dash-A23 was substituted and the plane flew Sept. 18 with E. D. (Sam) Shannon at the controls. (He reported normal performance, except for lag in hydraulic-system response to stick and rudder signals.)

Up to now the delta torch had been carried by a handful of engineers. The radical configuration evoked little enthusiasm within either the company or the Air Force. As the test program proceeded the plane attracted widening attention. Original plans called for retiring it after 50 hours' company testing. Instead, the Air Force took over with a 30-hour evaluation program of its own, and NACA became interested. After a dash-A29 engine was fitted in May, 1951 (5,300 pounds thrust plus afterburner), the Air Force and NACA continued testing the heavily instrumented plane another year.

Test pilots Capt. Charles Yeager and Maj. Frank K. (Pete) Everest did most of the early flying for the AF. They found the high performance plane easy to maneuver and land and exceptionally stable in the transonic region around Mach .9. The aircraft lacked power to pass Mach I and is known to have flown faster than sound only once—when Yeager flipped it on its back and pulled 4 Gs to put it into a vertical power dive. Yet Convair engineers were satisfied they had found a supersonic configuration. In 1951 they had an opportunity to prove it.



WORLD'S FIRST — This was XF-92A, world's first delta wing aircraft, as it looked on early flights. Eventually it was converted to traveling exhibit.

XF-92A Plane Finds Home at University

XF-92A was the world's first delta wing plane.

Project engineer during the construction windup and long test program was Thomas M. Hemphill. In the summer of 1954 the plane's wings and fin were cut and hinged, to fold for highway travel by truck. It appeared on exhibition at many air shows (was a part of the 1955 Rose Parade at Pasadena) and last year was donated on a permanent basis to University of the South, Suwanee, Tenn.

Engineer Team Bags Contract To Develop Landing Strip Mat

General Dynamics/Convair engineers are designing matting for use in a portable landing strip for Marine fighter craft under a Navy contract received recently.

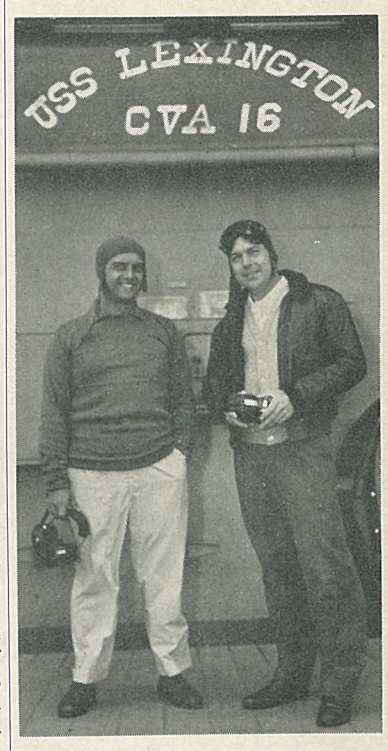
Awarded by the Naval Air Materiel Center, Philadelphia, Pa., the contract in the amount of $88,000 is the result of direct sales efforts of a GD/Convair perimeter engineering team headed by C. S. Brandt, chief of product support. It calls specifically for design, fabrication, and testing of SATS (small airfield tactical support) Landing Matting with work to extend over a period of 20 months.

Project leader, G. L. Pankey, and Ladislao Pazmany, both senior design engineers, are responsible for coordination of efforts.

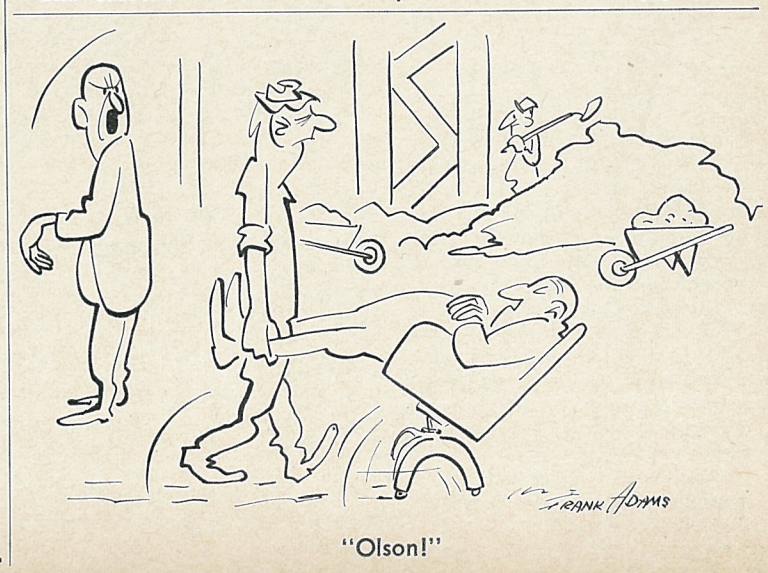
According to Pankey, lightweight materials will be studied and tested for construction of portable panels, about 20 square feet in size. These panels, when laid to form a short landing field 2,000-ft. by 72-ft. wide, must be strong enough to withstand arrested landings and catapult takeoffs of latest-type Marine Corps jet aircraft.

Pankey and Pazmany were aboard the USS Lexington off San Diego coast this summer to study problems in aircraft landings and takeoffs which are similar to those anticipated on portable landing fields. The SATS fields would, to all practical purposes, be land base adaptations of aircraft operations.

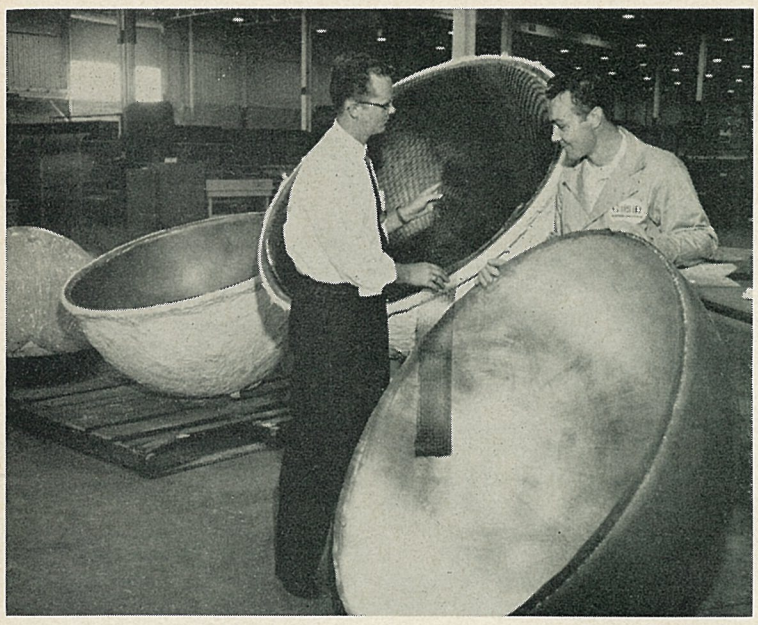
The current GD/Convair contract is one of the first of this type to be obtained on a competitive bidding basis, Pankey pointed out, and due entirely to concentrated efforts of perimeter engineering which entered the sales field to push division capabilities early this year.



SHIPBOARD STUDY—GD/Convair engineers, Ladislao Pazmany and G. L. Pankey, cruise on USS Lexington to study short landing problems.—U. S. Navy photo.



"Olson!"



MAN-SIZE "SANDWICHES"—D. L. Ingram and Lewis Pigo examine strip of multiwave honeycomb used as middle layer in strong, lightweight bulkheads produced by multiple bonding operation. Unit at right is completed; one behind Ingram awaits addition of inner nickel wall.

Strong, 'Sandwich' Bulkheads Bonded in Single Operation

Special test bulkheads promising great strength at very low temperatures, yet so light a man can lift one, are now being produced at General Dynamics/Astronautics.

Called "spheroidal, honeycomb, sandwich bulkheads," the 56-inch diameter hemispheres were produced by applied manufacturing research and process development (Dept. 290) at the request of GD / Astro's engineering pre-design group.

The project centers on the design of internal bulkheads for future space vehicles powered by liquid fuels at cryogenic temperatures (more than 400° below zero).

The new bulkheads consist of three layers of material, sandwiched together with a special adhesive selected for its ability to withstand extreme cold, and bonded into a finished unit in a single operation.

Fabrication begins with an "electro-formed" hemisphere of almost pure nickel, especially made for GD/Astronautics in .008 and .015-inch thickness. Inside this is fitted a layer of "multi-wave honeycomb"—thin strips of corrugated aluminum linked to form a strong but flexible mesh one-half inch thick. A second preformed nickel hemisphere serves as the bulkhead's inner wall.

To bond all three layers in a single operation, D. L. Ingram, manufacturing research engineer in charge of the project, borrowed a technique from high-temperature brazing.

"All phases of bulkhead fabrication are conducted with 'white glove' cleanliness," he explained. "Like brazing, successful multiple bonding requires that all material used must be free of contamination."

When the bulkhead assembly is complete, it is "cured" under heat and pressure in GD/Astro's big "pressure cooker" (autoclave) outside Bldg. 27.

Assisting Ingram on the project are technicians Lewis Pigo (Dept. 290) and Al Flores (Dept. 454). GD/Astro's tooling department built the precision high-temperature bonding tool required, and assisted with autoclave operations.

A total of seven bulkheads will be made using the new method.

Winning Design to Get Turkey If Chosen For Club Emblem

An illustrated lecture on desert reptiles by Dick Schwenkmeyer, San Diego State College instructor, will be featured at the next meeting of ARA Explorers at 7:30 p.m., Oct. 19 in the ARA Clubhouse.

With a Thanksgiving turkey to be awarded to the winning "artist," designs for the club's official insignia will be submitted at this meeeting.

Larry Beaver, ARA commissioner, has asked members to prepare drawings of their proposals (simple as possible) centered on standard-sized sheets of paper. The sample drawings will be displayed and the winning emblem chosen by popular vote.

The club's next field trip on Oct. 21 will take them to Carrizo Gorge north of Jacumba where two "scouting parties" will be formed. One group will hike along 11 miles of San Diego-Arizona Eastern railroad track, while the other explores a three-mile segment of the gorge.

This area is the scene of early southern California railroad camps, and numerous Indian relics have been discovered in the vicinity.

Newly-elected officers of the Explorers are John Estlick, president; Don Norton, vice president; John Stengle, treasurer; Paul DuPre, secretary, and Del Gerbaz, trip chairman.

Armstrong Installed By Rocket Society

G. L. Armstrong, chief project engineer on the Atlas program at General Dynamics/Astronautics, was installed as president of the San Diego Chapter of American Rocket Society late last month.

Dr. A. E. S. Green, chief of physics at GD/Convair, is new vice president; and T. B. Woersching, GD/Convair design specialist, treasurer.

Golf Yen, Ladies? Sign Up For Lessons

Astro Wives' Auxiliary has planned a series of events for women with a yen for the golf course, including regular play, tournaments and a series of lessons on the agenda.

An organizational meeting of "distaff" golfers will be held at 10 a.m., Oct. 19 in the ARA Clubhouse. A six-lesson series costing about $10 will begin at Mission Valley Country Club early next year.

Additional information is available from Mrs. John H. Gissell, BR-7-4325.

Diesen Crowned ARA Chess Champ

Carl Diesen was crowned new GD/Astro plant chess champion upon conclusion of the ARA Chess Club-sponsored tournament held recently.

Eighteen players took part in the meet which was divided into two classes. Diesen, class "A" winner, met the winner of class "B" competition, Harry Baldwin, in a play-off to decide the championship.

Toastmasters Now 'Dynamic'

A new name, new meeting date, new slate of officers start the Convair Toastmasters Club 457 on a fresh club term.

The speakers' group has chosen "Dynamic" for its new name to more clearly denote its function, serving all General Dynamics men in the San Diego area.

Meeting nights have been changed to Thursdays with 6 o'clock dinners in the Convair executive dining room on Pacific Hwy.

John Belanich of Astro was installed president at the Sept. 30 Area Five awards banquet in Mission Valley Inn. Other officers, seated by Andrew Gormish (Dept. 6), Area Five governor, are: educational vice president, Charles Willits of Convair; administrative vice president, William Szabo, Astro; treasurer, Fred Stevens, GD/Electronics; secretary, Ed Wynn, and sergeant at arms, Jim Tucker, both of Astro.

Highlight of the banquet was presentation of "Club of the Year" trophy to Naval Training Center club. Dynamic Toastmasters were runners-up. The imaginative figure of a medieval



"INNER SOUL"—Andy Gormish (Dept. 6) contemplates "best club" trophy designed to portray Toastmaster's "inner soul."

trumpeter, symbolic of a Toastmaster's "inner soul," was designed by Willits, Convair industrial designer, and executed by Jack Boyd, La Jolla silversmith.

For information on Toastmaster activities call Belanich at Astro ext. 2143.

ARA-CRA Racqueters Dominate IRC Tourney

Members of ARA and CRA Tennis Clubs dominated play in San Diego Industrial Recreation Council (IRC) tennis tournament recently concluded at Morley Field.

The GD/Astro team of Ben Cendali (Dept. 573-2) and Larry Chambers (Dept. 305) won doubles championship over Stan Griffin and Dennis Sealy (both Dept. 6), GD/Convair, 3-6, 6-2, 6-3.

Griffin captured the singles crown by edging John Cannau (GD/Astro Dept. 597-3) in three sets, 3-6, 6-1, 6-4, and GD/Astro's Ron Sanchez (Dept. 578-2) won consolation singles championship.

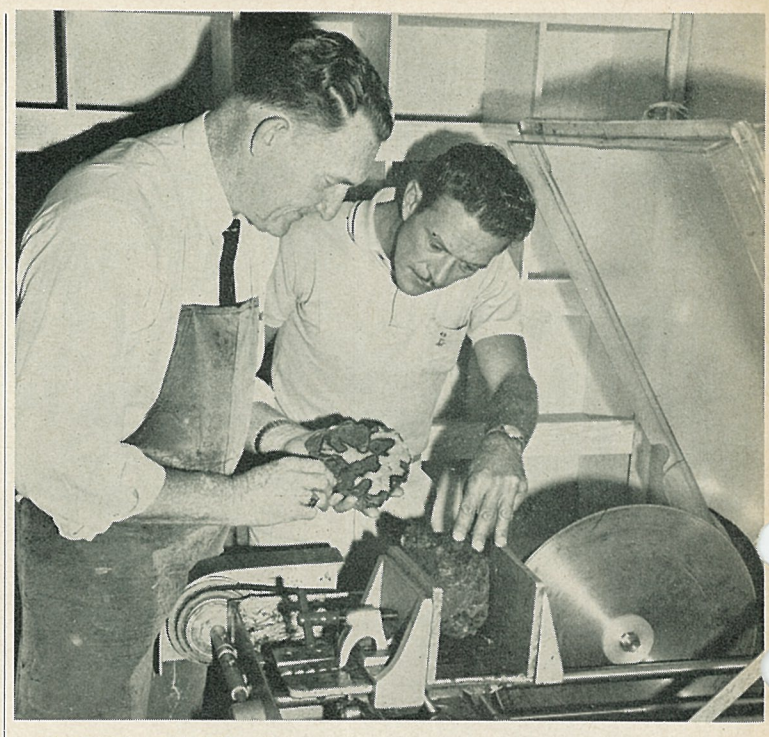
Ray Mendoza of GD/Astro employee services, representing IRC, presented trophies at conclusion of play.

Discounts Offered For Film Festival

Special discount rates for the Coronado International Film Festival now in progress at Hotel del Coronado can be obtained by General Dynamics employees who present their ID cards at the box-office.

Including 20 per cent discount, reserved seats cost $1.80, with general admission tickets selling for $1.20. The festival includes important feature-length films from throughout the world, with showings at 6:15 and 9:15 p.m. nightly.

Film entries from the United States will be shown tonight (Oct. 11), with movies from Italy on Oct. 12; France, Oct. 13; and Mexico, Oct. 14. All foreign films are subtitled in English.



HIDDEN BEAUTY—F. A. Baugh shows Dale Medearis multi-colored interior of rock specimen he has just bisected with diamond slab saw. Saw is one of several pieces of equipment now in operation in Rockhound workshop in ARA Clubhouse.

Lapidary Classes Scheduled In New Rockhound Workshop

As the ARA Clubhouse approaches completion, more and more ARA clubs are occupying specialized facilities catering to their interests.

Typical of these is the Rockhound workshop in the south wing of the Clubhouse, where, in a 16 by 35-foot room is located all necessary equipment to support the hobby.

Included is an 18-inch diamond slab saw, 10-inch trim saw, three power grinder setups (three more will be added later), wet and dry sanders, two polishing arbors, and a lapping machine. The equipment is set up amidst a battery of cabinets and bins for material storage, and display cases where members' handiwork can be displayed.

The 75 GD/Astro families who belong to the club played a large part in construction of the facility. The group makes one weekend field trip each month, and also holds monthly business meetings.

Typical is that scheduled for 7:30 p.m. tomorrow (Oct. 12) in the workshop when a guest speaker will discuss fluorescent mineral specimens which glow when viewed under "black" (infrared) light.

"Like all ARA activities, any GD/Astro employee and members of their families, can take part in Rockhound functions," explained Fred Baugh, ARA commissioner. "These clubs 'belong' to the employees."

Beginning Oct. 16 at 7:30 p.m., formal instruction in the use of lapidary equipment will begin in the workshop. Sessions will be held on Mondays and Wednesdays for eight weeks with a fee of $4 per person covering cost of materials and instruction for the series.

The workshop is open for use of Rockhound members from 4:30-10 p.m., Mondays, Wednesdays and Fridays, with a usage fee of 25 cents per person.

'LUCKY' FRIDAY SET FOR SKIING OUTING

Friday (Oct. 13) can be a "lucky day" for members of ARA Water Ski Club.

This date has been scheduled by Bill Johnson, ARA commissioner, as the day for members to register for the club's fourth weekend trip to the Salton Sea, Oct. 14 and 15.

Johnson, on second shift, can be reached during the day at BR-8-6922. He said the trip will cost $5 per person to cover cost of boat operation at the skiing site.

Magazine Cover, Mounted as Plaque, Given Sycamore Engineer by Radio Relay League

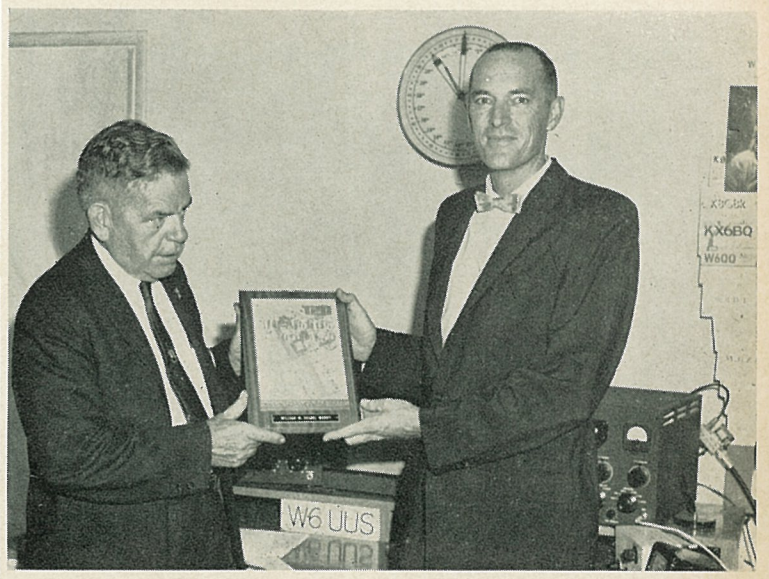
The first award of its kind bestowed by the Amateur Radio Relay League (ARRL) has been received by GD/Astro's W. W. Deane, Dept. 573-1, a member of ARA Radio Club.

An article written by Deane, appearing in July issue of QST, official ARRL magazine, was selected by the national organization's directors as the month's outstanding technical article.

In recognition, Deane was presented with the magazine cover plate, mounted as a plaque.

Deane's July article concerned a mobile 10-meter radio unit featuring modular construction.

Deane is a flight test engineer assigned to GD/Astro's Sycamore Canyon facility. A retired Navy airborne electronics officer, he received his first amateur radio license in 1939.



NATIONAL HONOR—Ray Meyers, Southwest Director of Amateur Radio Relay League, presents W. W. Deane, GD/Astro Dept. 576, with plaque-mounted cover engraving from QST Magazine in which article by Deane appeared.

3,000 Hrs. of 'Hard Labor' Rewarded With 'Effies'

More than 3,000 manhours of volunteer effort were represented in GD/Astronautics Recreation Association "Effie" awards presented last week to employees at the main plant and support center (Plant 2).

The awards—missile ash trays, desk sets, and ARA jackets representing 20, 60 and 100 hours' effort respectively—were an acknowledgment of employee interest in developing the ARA Recreation Area and Clubhouse.

Presentations were made at Plant 2 by Ray Mendoza on behalf of J. R. Mitchell, chief of employee services, and at Plant 71 by R. A. Evans, manager of personnel administration.

"The progress made on Recreation Area projects within the last year is spectacular," Evans said. "A sincere vote of thanks is due to all of you who contributed so generously of time and effort in developing this facility."

Receiving blue and white ARA jackets for 100-hours' work were J. W. Guchian, J. E. Kemp, G. R. Starkey, J. Stussy and F. A. Baugh from Plant 71; A. Ogden and D. J. LaBorde from Plant 2.

Other Plant 2 employees honored were:

TWENTY-HOUR—T. W. McGuire, A. Ogden, O. A. Smith, D. J. LaBorde, C. P. Hansen, G. J. Leggott, E. E. Landry, L. Ely, J. M. Rogers, A. J. Braidic, H. S. Burphy, H. R. Crouthamel, S. T. Special, S. Galasso, H. West, G. S. Ford, D. L. Schmitz, W. S. Wilson, C. E. Hudephol, A. H. Leboffe, B. Galatis, J. J. Martinez, J. E. Fleming, L. F. Duncan, E. J. Kulczyk, C. W. Koskinen, R. W. Dickenson, O. G. Mecham, Al Landry, R. Mitchley, R. Welk, J. W. Cushman, E. A. Perryman, and W. J. White.

SIXTY-HOUR—A. Ogden, D. J. LaBorde, S. T. Special.

At Plant 71, award recipients were:

TWENTY-HOUR—R. A. Asperin, L. G. Atwell, W. F. Barto, B. A. Beach, M. J. Blakeley, H. Boynton, J. R. Cannau, L. Chambers, H. Davis, F. D. Gilliam, R. S. Hagloch, W. P. Hatherley, L. E. Johnson, E. L. Johnston Sr., N. D. Kellogg, W. V. Kenyon, F. W. Mattern, J. Miller, J. E. Neff, C. P. Norwood, W. Powell, G. B. Russell, A. Saastad, C. E. Shuler, F. L. Shuter, S. Smith, F. L. Smith, G. R. Starkey, L. D. Thompson Jr., A. A. Ulm, H. Walsh, L. Washalaski, J. W. Guchian, C. J. Banks, M. Streiff, J. Bilecki and J. J. Navarette.

SIXTY-HOUR—J. Batson, H. Dempster, J. W. Guchian, A. Johnson, J. H. Kayda, J. E. Kemp, G. R. Starkey, H. Thompson, D. Medearis, D. Nopens, G. Carter, T. Farrelly, G. Halterman, A. J. Kent, M. Streiff.

Ice Skating In Full Swing For ARA Fans

The joint ARA-CRA Ice Skating Club season is in full swing with weekly skating sessions held at Iceland, 6055 Lake Murray Blvd.

Club members have exclusive use of the rink from 6:30 to 8 p.m., Thursdays; then may continue to skate until 10 p.m. for no additional charge after the rink is opened to the public.

Admission is 75 cents for adults, 50 cents for youngsters under 16, and skates may be rented for 35 cents. Spectators are admitted free.

Club members receive free skating instruction from Audrey Ericson. An advanced dance class starts at 6:45 p.m., intermediates at 7 p.m., and beginners at 7:15 p.m.

Additional information is available from Martha Woodberry, CRA commissioner, Plant 1, ext. 1245, or from Bud Davies, ARA commissioner, ext. 3441.



ASTRO WIVES—Alleen Priest, left, Esther Horning and Georgie Hatfield display decorations prepared for annual benefit card party to be sponsored by Astro Wives' Auxiliary Oct. 20.

Few Tickets Still on Hand To Annual Benefit Party

Some tickets are still available to ARA Astro Wives' Auxiliary's annual benefit card party slated for the GD/Astronautics cafeteria Oct. 20.

Play opens at 8 p.m., with bridge, pinochle, and canasta enthusiasts organized in "tables" of four. Door and table prizes will be awarded, and refreshments served throughout the evening.

All employees, dependents and guests have been invited to attend. Tickets and reservations are available from all employee services outlets at $1 per person.

All proceeds of the event will be used to support a Christmas party for needy children. Additional information is available from Mrs. Carl Priest, BR-7-2309, or Mrs. John Horning, BR-7-4104.





ARA TRIBUTE—Astro men (and lone woman) at Plant 71 (above) and stalwart group at Plant 2 (lower shot) receive well-earned awards for labor put in on Astro Recreation Association Clubhouse and grounds. Mrs. F. L. Smith and husband (Astro Dept. 280) both put in hours enough for awards.

Hunters Sought For 'Big Game'

Big game hunters from GD/Convair and GD/Astro can begin "drawing a bead" on the prizes for winners of the Gun Club's annual Big Game contest which opened this month and will run through Dec. 12.

Open to all employees and their families, the "hunt" will be climaxed with a drawing at Gillespie Field Dec. 12. Jack Swank, CRA commissioner, and Ezra Johnson, ARA commissioner, urged all hunters to enter their big game "kills" in the drawing.

Successful hunters bagging any type of big game (deer, bear, moose, elk, antelope, etc.) can obtain entry blanks in the employee services office.

First prize winner will have a choice of a ribbed-barrel, maple wood Winchester shotgun or a .308 Remington automatic-loader rifle. The commissioners said number of secondary prizes will depend on number of entries.

Last year's entries totaled 134, the majority of which were deer but, in addition, three elk, one caribou, an antelope were claimed. Additional information can be obtained by contacting Swank at Convair, ext. 1161, or Johnson, ext. 2283, Astro.

Keg Tourney Entries Open

Additional entries in ARA's fourth annual bowling tournament slated Nov. 11-12, 18-19 at Clairemont Bowl will be accepted through Oct. 31.

The handicapped event will include men's and mixed team bowling, doubles and singles, with trophies for top scores in all categories and one cash prize for every 10 entries.

Tournament officers are Tony Minniti, director; Barbara Mahaffey, secretary; and Jack Boyle, treasurer.

Applications are now available at all GD/Astro employee services outlets and at Clairemont Bowl. Fee is $3 per event. Additional information is available from ARA headquarters, Bldg. 8, ext. 1111.

Motorcyclists Plan 'Rider of Year' Event

Additional planning for an ARA Motorcycle Club "Rider of the Year" competition is slated for the club's next meeting at 7:30 p.m., Oct. 18, in the ARA Clubhouse.

Preliminary arrangements for the event were completed at a meeting last week, when members also discussed formation of a club auxiliary to the local Civil Defense organization.

Paul S. Shannon, ARA commissioner, has urged all GD/Astro employees interested in motorcycling to contact him at ext. 1084 for additional information on the club and its activities.

ARA Calendar

(GD/Astronautics Recreation Association has some 40 activities in operation for employees. For information, call ARA Headquarters, ext. 1111.)

BOWLING — Applications for bowling tournament at Clairemont Bowl Nov. 11-12, 18-19, now available at employee services outlets at Bowl. Fee $3 per event.

COINEERS — Meeting 7:30 p.m., Oct. 18 in ARA Clubhouse. Slide show, auction, display and trading session featured.

EXPLORERS — Meeting 7:30 p.m., Oct. 19 in ARA Clubhouse. Field trip Oct. 21 to Carrizo Gorge area.

FISHING—Workshop sessions in ARA Clubhouse Tuesdays, 4:30-10 p.m.

MOTORCYCLE CLUB—Meeting 7:30 p.m., Oct. 18 in ARA Clubhouse.

REDUCED RATE TICKETS—Discounts of 50 and 75 cents respectively available with tickets to motorcycle races and modified sportsmen events at Cajon Speedway, now available at employee services outlets.

RADIO CLUB — Meeting 7:30 p.m., Oct. 12 in Radio Room, ARA Clubhouse. Guest speaker Tony Mozier will discuss "MARS" and "Traffic Handling."

SPORTS CARS—Meeting 7:30 p.m., Oct. 19 in ARA Clubhouse. Films of recent Photorama Rally will be shown.

WIVES AUXILIARY—Benefit card party in GD/Astro cafeteria, 8 p.m., Oct. 20.

Ken Crotz Crowned King In Championship Golf

Ken Crotz, Dept. 832-1, was crowned new king of GD/Astronautics golf circles when he won the championship flight in ARA's plant championship recently.

Ninety-three golfers took part in opening rounds at Bonita, continued at Fletcher Hills and concluded Sept. 23 and 24 at Bonita.

The contest was divided into 12 flights with each contestant getting two cracks at a flight championship. Opening round losers in six flights dropped into competition in six other flights.

Runner-up in the championship pairing was Jack Weaver, Dept. 551-7.

Dick Tobias won the 1st flight over John Olsen, while Gene Velasquez led Chuck Dunand in the 2nd. Third flight went to E. E. McKenzie over Lou deBelloy, with Mark Pruitt winning over Ray Stites in the 4th.

In the 5th flight, L. B. Dickson downed Charles Hopkins, and C. C. Farnsworth topped M. T. Embree in the 6th. Seventh flight honors went to Carl Labmeier over Lou Marine.

Dick Torrence defeated Bill Marshall in the 8th, Al Lane led Rudy Romero in the 9th, and R. R. Reid topped Al Kaufenberg in the 10th flight. In the 11th, it was Henry Araiza over Clark Saunders.

The tournament was coordinated by John Sentovic, ARA commissioner.

'Neophyte' Knutson Wins Master Shoot His First Time Out

In his first match in master class competition after advancing from the expert bracket, J. S. Knutson won the .22 police course event in ARA Pistol Club matches recently.

Knutson fired a 290 to top a 288 by Bill Geopfarth, ARA commissioner.

A. B. Carlson led expert class shooters by downing Bruce Ward 276 to 265, while Marguerite Slater fired 275 to lead Bob Geopfarth's 266 in sharpshooter competition. Marksman honors went to Jim Fortner with 260, followed by Byron Clapper with 239.

Ralph Sanderlin fired 269 to win a .45 short national match over Russ Oliver with 255; Ken Bunker, 246; and Ed Maiers, 241.

Club matches are held regularly at San Diego Police Pistol Range. Only .22 caliber events will be held during October.

Saturday Dates Set for Salvage

Schedule for salvage yards at GD/Convair and GD/Astro for the next four Saturdays is:

GD/Convair—Oct. 14 and 28.

GD/Astro—Oct. 21 and Nov. 4.

Slide Show Slated For Coineer Parley

A slide show from the American Numismatic Association Library, Chicago, Ill., will be featured at the Oct. 18 meeting of ARA Coineers at 7:30 p.m. in the ARA Clubhouse.

Title of show is "Regular Issues of Odd Shaped Coins of the Twentieth Century."

Members have been asked to bring displays of European coinage to the meeting. A coin auction and brief trading session are planned. Those attending will receive a free Canadian coin minted in 1955.

Fishing Club Plans Membership Workshop

Workshop sessions for members of ARA Fishing Club are now being held regularly on Tuesdays from 4:30 to 10 p.m. in the ARA Clubhouse, T. B. Field, ARA commissioner, has announced.

An instructor is present during these times to assist members with equipment repair, or in making jigs, sinkers and tied flies. A library of fishing books and magazines is also available in the workshop.

Astro Entry Tops Area Economy Run With 'Impossible' 62 Mi. a Gallon

An "impossible" 62 miles to one gallon of gasoline was recorded by ARA Sports Car Club member Elmer Smith, Dept. 591-4, to win a recent economy run sponsored by a La Jolla car club.

Smith pampered his well-prepared Alfa Romeo coupe through the tons-mile event to win first over all classes of cars entered.

Another member of the ARA club, E. S. "Judge" Penick, Dept. 510-4, placed second among sedans entered, piloting a 1953 Studebaker for a 29 mpg record.

A "film festival" including scenes from the ARA club's recent Photorama Rally will be featured at the group's next meeting at 7:30 p.m., Oct. 19 in the ARA Clubhouse.

Long Career Forecast For 'Forty Four' as Best Of Freight Airplanes

A prediction that the Canadair Forty Four turboprop will remain the world's best freight airplane for years to come was made recently by Robert W. Prescott, president of Flying Tiger Line.

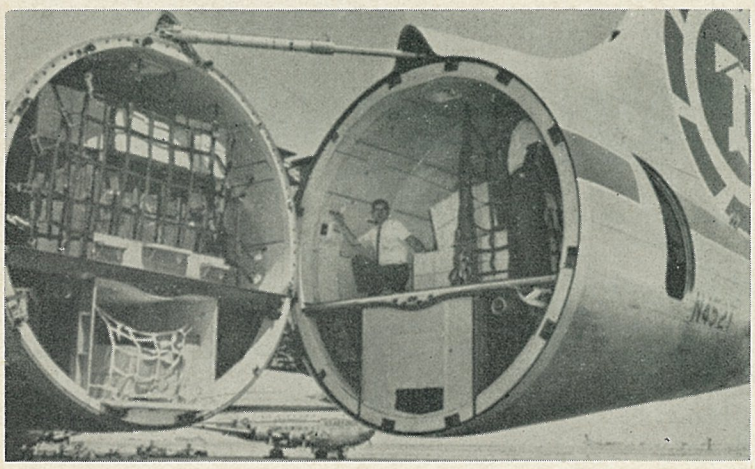
In the first 1,600 hours of flight time Flying Tiger's initial five Forty Fours of the 10-plane order proved out everything that had been predicted for them in economy, reliability and capability, Prescott told the press at a Washington, D.C., demonstration. Forty Fours are built by Canadair Limited, subsidiary of General Dynamics Corporation.

The first scheduled flight for Flying Tiger was made by a Forty Four July 16 when "51T" left Travis AFB (near San Francisco) on a MATS flight carrying 134 passengers and a crew and inspection team of 16. It landed in Tokyo 19 hours, 24 minutes later, with a fuel stop at Anchorage, Alaska. A little more than 12 hours afterward 51T was on its way back to the states with another load of passengers.

On another Forty Four flight to Tokyo Flying Tiger claimed a new record of more than 61,000 pounds of freight transported over ocean. In the first trans-pacific freight flight by a Forty Four, 52T left Travis July 28 and flew via Honolulu and Wake Island. Less than seven hours after arrival it took off for home. Total elapsed time for the round trip was less than 48 hours. The lift surpassed the previous mark held by a Flying Tiger Super H Constellation of 44,600 pounds of cargo.

Despite the record, the Forty Four was not loaded to capacity.

Seaboard World Airlines, operating from New York to Europe, is flying two Forty Fours of five ordered. Slick Airways will receive two Forty Fours this fall.



LOADED—Ready to secure swing tail, Forty Four is loaded with record freight tonnage by Flying Tiger Line prior to takeoff for Tokyo.

GD/Convair Delegation To Attend 'William Tell'

At least 16 General Dynamics/Convair men will be on their way to Panama City, Fla., next week to observe performance of Convair jet interceptors in this year's USAF Worldwide Weapons Meet (called "William Tell") at Tyndall AFB.

In charge of GD/Convair's participation is H. J. Richardson of GD/Convair marketing.

Others planning to be on the site during the maneuvers are R. W. Warden Jr. of General Dynamics military relations; O. W. Harper, GD/Convair manager customer service; L. E. Ottem, chief military programs engineer; Roy Sommers, chief interceptor service; W. W. Fenton, Hal Wilson, Rod Fowle, S. B. Stevens, all of interceptor service engineering; Howard Kennedy, chief of service publications; L. J. Solheid and G. P. Williams, both of service publications; P. A. Carlson, Model 8 project engineer; W. A. Daniel, assistant Model 8 project engineer; E. A. Fish of customer service; Howard Auten, test pilot at Holloman AFB; R. E. Myrann, engineering test pilot, formerly chief test pilot at Palmdale.

Full Passenger Loads Riding TWA 880s As Jets Streak From St. Louis to N.Y.

Full passenger loads welcomed Trans World Airlines Convair 880 service connecting Tulsa, Okla., with St. Louis and New York in late August.

According to Tulsa Daily World aviation columnist Frank Leslie, "the most heartening thing, on Aug. 19 and 20 inaugural flights, was hearty passenger loads hauled by the swift, four-engine jets.

"The Convair 880 was about half full when St. Louis passengers departed on the Saturday return. But the plane filled up again when Tulsa-bound travelers boarded.

"TWA had about 40 people waiting at the Tulsa Municipal Airport for the afternoon return trip Saturday.

"This TWA SuperJet leaves the ground like a 'scrambled' fighter called to combat duty," wrote Leslie, whose comments were forwarded by Glen Arner, General Dynamics/Convair service rep at Oklahoma City. "And once aloft, it seems to take pure physical pleasure in streaking to its destination!"

RCAF Orders 190 CL-41 Jet Trainers From Canadair Ltd.

Canadair Limited's CL-41 has been chosen the new basic jet trainer airplane for the Royal Canadian Air Force.

Canadian Minister of National Defence Douglas S. Harkness announced that 190 are being ordered to enter service in 1963.

"The RCAF has been considering the introduction of a basic jet trainer for several years, and has tested and evaluated most of the training aircraft available," Harkness told the House of Commons. "The CL-41 is the newest and most modern jet trainer available."

Designed, developed, and produced in prototype by Canadair as a company venture, CL-41 has side-by-side seats, and is capable of teaching a student pilot his whole course from first flight to supersonic airplanes.

With a speed range from 75 miles an hour to 475, the CL-41 has an altitude capacity of 44,500 feet and a typical training mission endurance of two and a half hours.

CIP and ES Savings Pass $50 Million

Combined installed savings from Cost Improvement Proposals and Employee Suggestions since the program's inception at General Dynamics/Fort Worth in 1942 reached the $50 million mark in August.

And cash awards to employees for installed ESs reached a cumulative $383,174. M. J. Scott, administrator of the suggestions program, estimated that about 20 per cent of the over 66,000 ESs submitted since 1942 had been approved and installed.

"The $50 million record is one that every department can be proud of," Scott said.

Helping to push the installed savings total over the top in August were two CIPs totaling over $100,000.

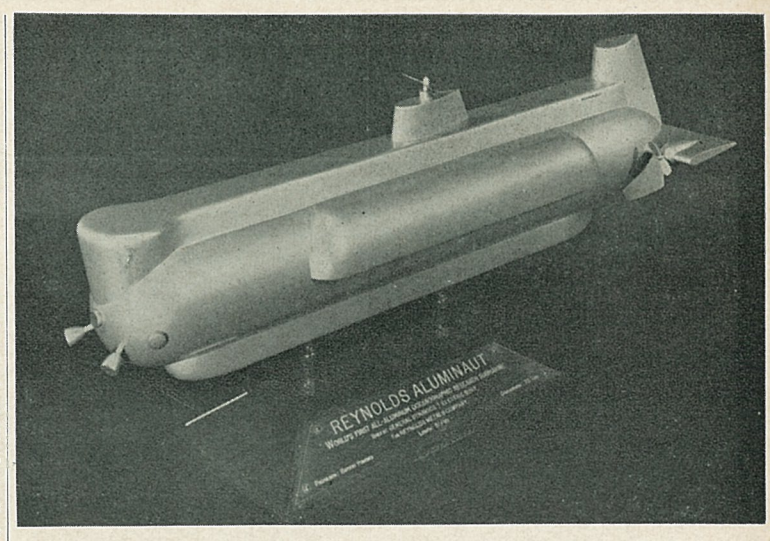
J. T. Rhoades, Dept. 74 assistant foreman, saved an estimated $73,636 the first year with his suggestion to discontinue complete refinishing of B-58s between flights and replace only decals that cannot be clearly distinguished.

Another Dept. 74 assistant foreman, W. G. Allen, suggested sewing a row of stitching ¼-inch in from the outside edges on B-58 insulation panels, reducing sewing time and saving material.

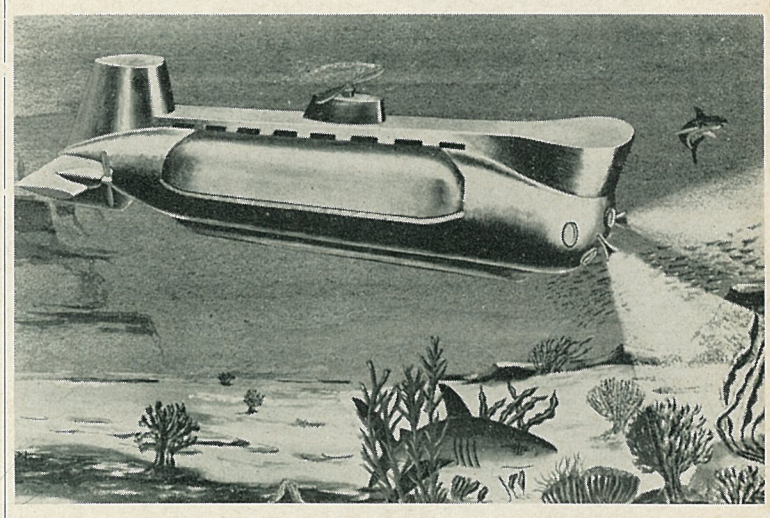
GD/Electronics Wins Tracking Contract

General Dynamics/Electronics has been awarded a contract by the U.S. Naval Supply Center, at Oakland, Calif., to produce three "Two-way Doppler Tracking Systems" for shipboard operation on the Pacific Missile Range.

The systems, which will make extensive use of solid-state circuitry, will include tracking antennae, ultra high frequency transmitters, extremely sensitive phase-lock receivers, and data processing and recording equipment.



"ALUMINAUT"—General Dynamics' design for "oceanographic research submarine" to be built for Reynolds International was disclosed this week. Above is model of deep-diving (15,000 feet!) craft.



ON OCEAN FLOOR — Artist's conception shows "Aluminaut" cruising ocean deep. Craft is designed to carry pilot and two scientists.

Sensational Aluminum Submarine to Explore To 15,000-Foot Depths

An aluminum research submarine designed to explore the ocean at depths many times beyond the limit of existing subs will be built for Reynolds International, Inc., by General Dynamics Corporation's Electric Boat Division.

J. Louis Reynolds, chairman of Reynolds International, Inc., a subsidiary of Reynolds Metals Company, and Frank Pace, chairman of General Dynamics, have announced signing of a $2 million design and construction contract for the Aluminaut—first submarine ever to be constructed from aluminum.

Woods Hole Oceanographic Institution (Massachusetts) will operate the sub as part of a research program sponsored by the Office of Naval Research, (ONR) United States Navy. Most of the construction costs incurred by Reynolds will be recovered through lease of the craft for oceanographic research.

Construction of the Aluminaut will begin immediately at Electric Boat Division in Groton, Conn., and launching is scheduled for 1963.

"Designed to operate at depths of 15,000 feet — almost three miles down — the Aluminaut will permit man to explore about 60 per cent of the world's ocean floor — most of it for the first time," Reynolds said.

The Aluminaut is scheduled to be equipped with sonar, TV cameras for detailed observation of the ocean floor and robot hands to obtain specimens.

Displacing 150,000 pounds, the Aluninaut will be slightly over 50 feet long with an eight-foot-diameter hull. Separate electrical propulsion systems will give the three-man craft both horizontal and vertical locomotion. Its operating range will be about 80 miles.

"The sub's hull will be constructed by bolting together large, one-piece cylindrical sections of high-strength aluminum forgings. The world's largest aluminum ingot already has been cast for the first hull section," Reynolds said.

"Aluminum was chosen because it is three times lighter than steel and has greater strength for its weight than other available metals. This allows fabrication of a hull thick enough to withstand tremendous pressures at great depths, yet light enough to stay afloat without external buoyancy.

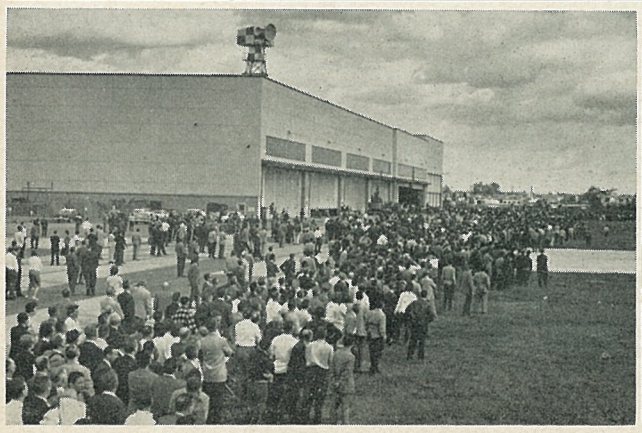
"In our constant research for new uses for aluminum we long have been convinced that an important potential lies in the field of ship and certain types of submarine hulls," Reynolds said.

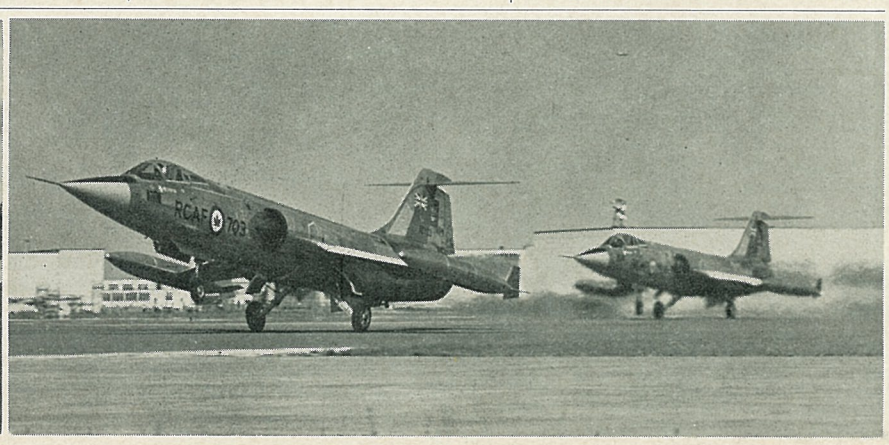
Operating independently of hoists from surface ships, the Aluminaut will be a true submarine, capable of cruising the ocean floor.

A vertical propeller will permit it to hover for special observations, and serve to regulate rate of descent and ascent.

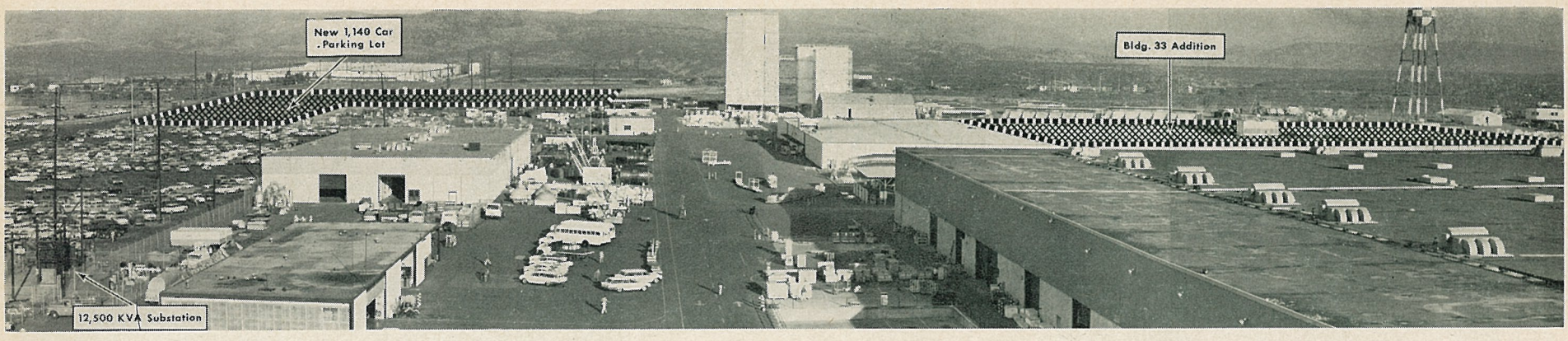
Speed will be 3.8 knots, with a 72-hour maximum time submerged. Storage batteries will drive the vertical propeller, as well as twin screws at the stern.

"The ocean floor is a relatively unknown treasure house of minerals, oil, chemicals and food sources," Reynolds added. "A new generation of undersea craft . . . could be equipped with mechanical arms to operate mining equipment, make borings and collect material from the sea bottom."





CF-104S AT MONTREAL — Tenth CF-104 built by Canadair Limited at Montreal rolled off final line recently. Ships No. 3 and 4 were test flown from Palmdale, Calif., this summer, followed by test flights for No. 1 and 2 last month at Montreal (right above). Canadair employees (left above) turned out for demonstration. Ships are being manufactured for Royal Canadian Air Force.



SWEEPING VISTA—Four photographs, taken with telephoto lens from top of Bldg. 3 by GD/Astro photographer Henry Kierstead, show ever-changing scenes of east edge of Astronautics' main plant site. New paved parking area under construction appears upper left. Two other new parking areas are not shown.

GENERAL DYNAMICS

NEWS

ASTRONAUTICS EDITION
(OFF-SITE)

Vol. 14, No. 22 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, October 25, 1961

Paved Parking Areas Growing At Mesa Plant

New construction projects and relocation of several departments into newly acquired space will keynote closing months of 1961 at General Dynamics/Astronautics.

Major expansion of work space at the main plant will be noted with completion of the 171,000 sq. ft. addition to Bldg. 33, now slated for completion in early December. New paved parking areas for almost 2,000 cars are "in the works" and a new power substation was installed recently.

Also on the agenda is expansion of areas occupied by GD/Astronautics at Plant 2. By late this year GD/Astro employees will occupy all of Bldg. 3, all of Bldg. 4 exclusive of first aid stations, two-thirds of Bldg. 24, and one-third each of Bldgs. 2 and 28.

Leading the series of moves into Plant 2 was the Oct. 9 shift of about 170 base activation (Dept. 600) employees from Bldg. 26 at the main plant to new quarters on the Bldg. 2 mezzanine. Over the coming weekend (Oct. 27-28) an additional 150 base activation employees now in the Astro materials building will take up office areas on the first floor of Bldg. 2. And some 80 tooling people (Dept. 400) now in Bldg. 5 will be relocated in the same area.

Taking up space vacated in Bldg. 26 at the main plant was a group of about 30 members of contract (Dept. 110) department,

(Continued on Page 2)



DOLLARS!—Ernest Buck, left, and Larry Janson, Con-Trib-Club Committee members at GD/Astro, hold bundles of cash representing more than $253,000 given local charities in San Diego area last year by Con-Trib. In addition, more than $90,000 was given in communities where Atlas bases are operating. Annual Con-Trib-Club membership drive begins Nov. 9.

DOUBLE-BARRELED CON-TRIB EFFORT WILL BEGIN NOV. 9

A double-barreled campaign for increasing Con-Trib-Club giving will be waged Nov. 9-17 at General Dynamics/Astronautics with twin goals of raising participation over 92 per cent and boosting total dollar contributions from last year's $384,000.

This year's effort coincides with a community drive at San Diego to support United Fund, hard pressed to operate its 97 agencies. Astro's dollar contribution goal will be established just as soon as its "fair share" of the overall United Fund goal is determined.

J. R. Dempsey, Astronautics president, will chairman this year's drive.

"I have reviewed the critical situation facing our community in financing United Fund and other charitable agencies. Therefore, I personally want to do everything I can to make this year's Astronautics campaign a successful one," Dempsey said.

"Although our Con-Trib-Club support in the past has been commendable, we need now to be substantially more generous — for their need is great."

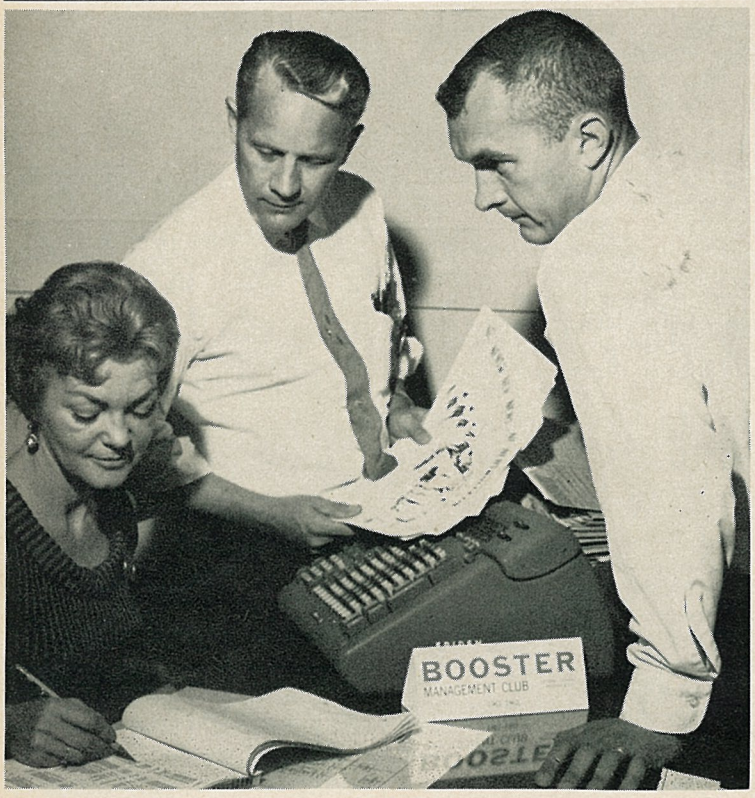
Tab cards are being prepared for all Astronautics employees. Nonmembers of Con-Trib may join by signing and authorizing payroll deductions of set amounts. To help each employee determine his "fair share," charts, based on income, will be printed on each card. Present members may wish to increase their present contributions.

In addition to the division-wide goal, dollar targets will be set for individual departments.

Last year Con-Trib-Club gave almost $230,000 to United Fund of San Diego County and $58,615 to similar combined community charity organizations in other sections of the country.

Beyond this, a total of $55,000 was contributed to other organ-

(Continued on Page 2)



SUMMING UP—Margaret Johnson helps R. T. Bauman and D. K. Slingsby with applications during GD/Astro Management Club membership drive now in progress. Men are co-chairmen of Booster committee heading effort.

Fairchild, Forbes Sites Activated; Astro Men Cited

Atlas launch and service facilities supported by two Air Force installations — Fairchild AFB, Wash., and Forbes AFB, Kan. — were declared operational this month by the Strategic Air Command.

Operational status came for the two bases within a two-week period with Fairchild AFB leading off Oct. 3 and Forbes AFB following Oct. 16.

General Dynamics/Astronautics had had large work forces on hand at each base for an extended period, completing final installation and checkout of launch and service facilities.

While the exact number and location of launch complexes at each of these sites remains classified information, it was revealed that the two Strategic Missile Squadrons (the 567th at Fairchild and the 548th at Forbes) manning these sites were the fourth and fifth units of their types now on duty as part of SAC's forces. Too, it was announced that both bases are equipped with the series "E" Atlas which employs launch complexes consisting of "semi-hard" sites in which the missile is stored in a horizonal position below ground.

Previously, Atlas launch facilities were declared operational at Vandenberg AFB, Calif., Warren AFB, Wyo., and Offutt AFB, Neb. Under construction are "silo" type launch facilities at six other bases.

Maj. Gen. Thomas P. Gerrity, commander of the Ballistic Systems Division of the Air Force System Command, executive management unit for the nation's ballistic missile force, singled out individuals including many GD/Astronautics employees, for their

(Continued on Page 2)

Forbes Activation A Speedy Sequence

Some indication of the speed in which Atlas launch facilities are being built, equipped and checked out is indicated in a Strategic Air Command news release distributed at the Forbes AFB turnover.

It revealed this sequence in the Forbes activation:

February, 1959: Forbes selected as Atlas ICBM base, 548th SMS selected to man Atlas facilities;

June 12, 1959: Ground breaking for first complex takes place;

Nov. 30, 1960: First launcher installed in site near Burlingame;

Jan. 24, 1961: First Atlas missile received at Forbes AFB;

Oct. 16, 1961: Strategic Air Command accepts all Atlas facilities, declares base operational.



AT TURNOVER—Astronautics executives taking part in Forbes AFB turnover of Atlas missile sites pose before raised missile. They are, from left, M. R. Ubben, Forbes operations manager; P. M. Prophett, director of base activation; E. J. Huntsman, base activation manager for "E" and "F" bases; and W. L. Van Horn, Atlas program director.

Log Book Entries



VETERANS—Three new 25-year men were pinned recently at GD/Astronautics. From left, they are: Donald F. Pearse, Dept. 220-4; W. T. Herchold, Dept. 731; K. G. Clarke, Dept. 290-2.

Promotions

MAIN PLANT

Promotions to or within supervision effective Oct. 9.

Dept. 101-7, Data Processing: To asst. research group engineer, T. R. Dines.

Dept. 130-5, Industrial Relations: To employee services supervisor, K. A. Sears.

Dept. 141, Quality Control: To process control supervisor, L. Dassoff. To asst. supervisor, process control, H. C. Cox.

Dept. 220-3, Manufacturing Control: To manufacturing control asst. foreman, O. E. Morgan.

Dept. 305-0, Support Administration: To support task control asst. supervisor, W. B. Ambrose.

Dept. 321-3, Personnel Systems Engineering: To training asst. supervisor, G. Anderson.

Dept. 322-7, Support Publications: To support publications asst. supervisor, E. J. Boltz, E. P. Duggan.

Dept. 337-1, Support Documentation: To parts documentation asst. supervisor, R. A. Milot, T. P. St. Germain.

Dept. 351, Field Modification: To field modification group engineer, P. J. Miller. To foreman, N. D. McMahon, C. C. Scott. To asst. foreman, J. F. Krakowski. To support logistics asst. supervisor, M. L. Sweeney.

Dept. 831-1, Material Control: To material control supervisor, C. T. Felz, D. J. Gallagher. To material control asst. supervisor, R. D. McNall.

Dept. 840-0, Material Cost and Administration: To chief of material cost and budget, W. H. Barnes.

Dept. 842-1, Material Estimating: To material cost supervisor, C. E. Stoll.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To task control supervisor-base, M. G. Holleb. To launch complex asst. supervisor, W. A. Martin Jr. To production control asst. foreman-base, M. L. Larsen. To asst. foreman, J. L. Fox.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To task control supervisor-base, A. H. Rambeau Jr. To inspection asst. supervisor, D. C. Johannesmeyer. To receiving and stores asst. foreman, C. B. Dempsey. To production control asst. foreman-base, N. E. Tamm. To asst. foreman, G. F. Stengel Jr., W. H. Weatherby.

EDWARDS RS

Dept. 575-1, GD/Astronautics Operations: To asst. test conductor, P. J. Grubl.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To sub-contract coordination supervisor-base, R. C. Hawkinson. To subcontract coordination asst. supervisor-base, D. E. Vendeville. To head nurse, D. K. Davis. To MAB asst. supervisor, G. F. MacLean.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To task control supervisor-base, L. L. Davis Jr. To material control supervisor, R. E. Horne. To inspection asst. supervisor, D. Johnson, C. P. Renaud. To asst. foreman, H. F. Liscom Sr.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To head nurse, I. R. Wolf. To inspection asst. supervisor, C. L. Majors. To asst. foreman, P. K. Noland, A. P. Salazar.

SYCAMORE

Dept. 573-3, GD/Astronautics Operations: To asst. foreman, V. J. Farrell.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To field test group engineer, H. R. Pearson. To site engineering services supervisor, M. R. Knuth. To site engineering supervisor, F. H. Burris. To receiving and stores asst. foreman, D. J. Lester.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To asst. foreman, L. W. Carr, L. B. Dixon, C. A. Goeb Jr.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To task control supervisor-base, T. S. Klanicza. To transportation asst. supervisor, G. R. Chambers. To launch complex asst. supervisor, J. D. Stiles.

Deaths

FORBES AFB

EVERETT—Edward H., Dept. 614. Died Oct. 2. Survived by mother, Mrs. Mary P. Everett, and brother, Ernest.

Service Emblems

MAIN PLANT

Twenty-five-year: Dept. 344-1, O. E. Mecham; Dept. 536-3, J. W. Hanna.

Twenty-year: Dept. 181-0, S. J. Earle; Dept. 771-0, W. H. Marshall.

Fifteen-year: Dept. 195-0, C. H. Meyer; Dept. 342-3, R. E. Torrence; Dept. 451-0, Melius Serniuk, R. A. Wiedenfeld.

Ten-year: Dept. 130-1, Julia S. Carlin; Dept. 141-5, R. E. Culver; Dept. 193, Ruth D. Kain, J. E. Neff, D. S. Vollmer; Dept. 220-2, Gerardo Zendejas; Dept. 250-2, P. L. Callahan; Dept. 322-4, J. H. Mitchell; Dept. 401-5, John Ferson.

Dept. 522-2, Edward Kulas; Dept. 535-7, T. H. Buckley; Dept. 539-2, H. R. Havlik; Dept. 541-3, P. V. Smith; Dept. 545-7, R. P. Mikkelson; Dept. 553-1, P. M. Giard Jr.; Dept. 578-3, R. L. Batten; Dept. 646-0, J. F. Skarda; Dept. 733-0, F. C. Wolfe; Dept. 756-0, Margaret R. Johnson; Dept. 758-0, Horace Jackson; Dept. 771-0, R. D. Hill; Dept. 782-0, W. L. Van Horn; Dept. 811-1, A. W. Clark; Dept. 813-2, F. S. Brown Jr.

ALTUS AFB

Twenty-year: Dept. 617-0, Delbert Meredith.

Ten-year: Dept. 617-8, K. G. Hicks.

DYESS AFB

Ten-year: Dept. 618-7, J. L. McGuffee.

FAIRCHILD AFB

Fifteen-year: Dept. 613-8, D. W. Beck.

FORBES AFB

Ten-year: Dept. 614-7, D. H. Stone.

SYCAMORE

Twenty-year: Dept. 573-3, J. G. Gray.
Ten-year: Dept. 573-3, Donald Downs, W. F. Mundell.

WALKER AFB

Ten-year: Dept. 619-7, R. G. Buttrill.

Births

MAIN PLANT

DETWILER—Daughter, Judy Louise, 8 lbs., 2½ oz., born Sept. 6 to Mr. and Mrs. Jack Detwiler, Dept. 578-1.

LANGE—Son, Joseph Jude Morgan, 7 lbs., 5 oz., born June 30 to Mr. and Mrs. R. O. Lange, Dept. 322-5.

LEPPER—Son, Daniel Darwyn, 8 lbs., 8 oz., born Oct. 5 to Mr. and Mrs. Darwyn R. Lepper, Dept. 759.

SMITH—Daughter, Lorraine Maurine, 7 lbs., 12 oz., born Sept. 23 to Mr. and Mrs. Mark W. Smith, Dept. 324-4.

SYCAMORE CANYON

ADORNO—Daughter, Lisa Marie, 6 lbs., 1 oz., born Oct. 14 to Mr. and Mrs. Frank Adorno Jr., Dept. 573-3.

DYESS AFB

HINTON—Son, Jimmy Houston II, 7 lbs., born Sept. 9 to Mr. and Mrs. Jimmy H. Hinton, Dept. 618.

ROBERTS—Son, Gary Eldon, 7 lbs., 4 oz., born Oct. 10 to Mr. and Mrs. Gerow Roberts, Dept. 618.

WARREN AFB

ARNOLD—Daughter, 8 lbs., 13½ oz., born Aug. 23 to Mr. and Mrs. Eugene Arnold, Dept. 611.

BROWN—Daughter, Patricia Ray, 8 lbs., 4 oz., born Aug. 18 to Mr. and Mrs. Gary Brown, Dept. 611-6.

DEES—Daughter, Jane, 7 lbs., born Oct. 4 to Mr. and Mrs. H. L. Dees, Dept. 611.

GANNON—Daughter, Margaret Lu-Ann, 7 lbs., 8 oz., born Sept. 26 to Mr. and Mrs. Philip Gannon, Dept. 611-5.

JENNINGS—Daughter, Pamela Carol, 7 lbs., 5 oz., born Sept. 8 to Mr. and Mrs. Donald L. Jennings, Dept. 611-0.

MAKUS—Son, Jonathan Jay, 6 lbs., 1 oz., born Aug. 17 to Mr. and Mrs. Jeff Makus, Dept. 611-6.

RICHARDSON—Son, Jackson Curtis, 7 lbs., 12 oz., born Aug. 18 to Mr. and Mrs. Vance Richardson, Dept. 611-6.

ROYBAL—Daughter, 7 lbs., 7½ oz., born Aug. 4 to Mr. and Mrs. Fred Roybal, Dept. 611.

Salvage Yard Sale Schedule Listed

Next four-week Saturday sales schedule at General Dynamics salvage yards at two San Diego divisions are:

GD/Convair — Oct. 28, Nov. 11.

GD/Astro — Nov. 4 and 18.

General Dynamics NEWS

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Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton, Jeff Fishel.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50. P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

Paved Parking Areas Growing At Mesa Plant

(Continued from Page 1)

who moved last week.

Completion of the Bldg. 33 extension will signal moves which will see almost 5,000 members of engineering (Dept. 500) shifting.

Work on this project has moved at a fast pace. Lighting, primary power supply and air conditioning equipment is now being installed. By early November elements of manufacturing control (Dept. 220-3) are expected to be relocated there.

Growth of the Kearny Mesa facility has led to replacement of the main 7,500 kilovolt-ampere (KVA) electrical substation near Gate 1 with a new 12,500 KVA unit. (By comparison, a 6,000 KVA unit carried the electrical load for Plant 2 during the peak of World War II operations!)

Paving projects under way at the main plant include both employee parking lots and new in-plant missile storage areas.

Completed recently was a hard-surfaced 100,000 sq. ft. triangular parking area for 322 cars adjacent to the southwest parking lot. Later this month, an area of approximately the same size and accommodating 430 cars will be paved east of the existing south parking lot.

Grading is now in progress for a 350,000 sq. ft. area north and east of the reclamation yard. This is to be paved, lighted and marked for 1,140 cars prior to occupancy of Bldg. 33 expansion in December.

Also scheduled for paving are in-plant missile storage areas east of Bldg. 5 and west of Bldg. 33.

CHERRY AND BARNES ASSIGNED NEW DUTY

New executive assignments at General Dynamics / Astronautics have been announced for R. L. Cherry and W. H. Barnes by S. A. Falk, manager of material cost department.

Cherry, formerly chief of material cost and budgets (Dept. 844), is now a project administrator in material cost department. He will perform special assignment duties involving material estimating, price analysis and cost and budgets section.

Falk indicated that Cherry will spend considerable time in developing improved fiscal administration of base activation, subcontracts, material commitment control and mechanical cost processing.

Barnes assumes Cherry's previous post as chief of material cost and budgets. His responsibilities include analysis and reporting of material office project budget status and forecasts. In addition, administration of subcontract termination and cost plus fixed fee (CPFF) subcontract close-out groups of Dept. 840 will be directed by Barnes.

MANAGEMENT CLUB IN MEMBERS DRIVE

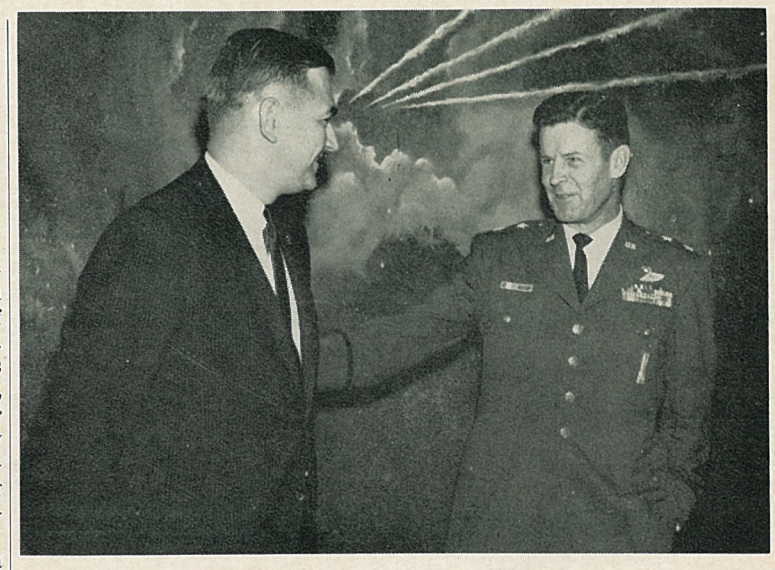
During the first weeks of a concerted membership drive now in progress, General Dynamics/Astronautics Management Club has contacted some 3,820 employees eligible to join the club.

R. T. Bauman and D. K. Slingsby are co-chairmen of the campaign which is coordinated through the club's "Booster" organization.

The effort is designed to introduce eligible nonmembers to advantages of club membership. Early results included more than 200 applicants, and telephone inquiries from others.

Next phase of the one-month drive is under way, with "Boosters" making personal contacts.

All non-represented salaried employees and supervision may join GD/Astro Management Club. Dues of $1.25 per month include initiation fee.



CITED—Maj. Gen. T. P. Gerrity, commander BSD, congratulates W. F. Chana, GD/Astro base manager at Fairchild, on Commanders Award, conferred Oct. 3.

Fairchild and Forbes Bases Activated, Astro Men Cited

(Continued from Page 1)

work in bringing the sites to operational status.

Awarded the Legion of Merit were Site Activation Task Force commanders at both bases, Col. Thomas S. Jeffrey Jr., at Fairchild AFB, and Col. William E. Ruark at Forbes AFB.

Special "Commanders' Awards" were presented to W. F. Chana, GD/Astro operations manager at Fairchild AFB, and M. R. Ubben, GD/Astro operations manager at Forbes AFB.

Special praise was paid by General Gerrity to all GD/Astronautics employees as well as those of associate contractors involved for their work on what he termed "significant accomplishments in the greatest construction and engineering task in the history of the nation."

During a speech at Forbes AFB General Gerrity pointed out that work there was completed three weeks before schedule and without manhour losses due to labor-management problems during installation and checkout, accomplished by GD/Astronautics.

GD/Astro personnel taking part in both turnover ceremonies included P. M. Prophett, director of base activation, and E. J. Huntsman, manager of "E" and "F" series base activation.

Mortimer Rosenbaum, GD/Astro's executive vice president, was on hand at Fairchild AFB ceremonies, while W. L. Van Horn, Atlas program director, participated at Forbes AFB.

In the Fairchild turnover, General Gerrity passed on the operational sites to Brig. Gen. H. W. Ohlke, commander of SAC's 18th Air Division; Col. L. F. Miller, commander of the 92nd Bombardment Wing, and Col. Leonard L. Jella, commander of the 567th Strategic Missile Squadron.

At Forbes AFB the turnover passed from General Gerrity to Lt. Gen. John D. Ryan, commander of SAC's 2nd Air Force, to Brig. Gen. Richard O. Hunsiker, commander of the 21st Air Division, and then to Col. Gerald M. Clugston, commander of the 548th Strategic Missile Squadron.

All-Out Con-Trib Drive Scheduled

(Continued from Page 1)

ized charities. This was approximately $13 per capita, scarcely $1 a month.

"When you consider that our Con-Trib-Club is designed to concentrate our individual charity obligations in one gift, this is not a large sum," Dempsey said.

Although the total allocation to United Fund last year from Astro employees appears formidable, it falls considerably short of the individual giving reported from other, though smaller, concerns. One registered $25 per capita for United Fund alone.

Mixed Choral Group Opens New Season

Astro Notes, ARA mixed choral group, has opened a new season of activity and now meets and rehearses promptly at 7:30 p.m. every Monday in ARA Clubhouse.

C. P. Rolla, ARA commissioner, has announced that bass, tenor, soprano and alto voices are needed to fill out the group this year.

GD/Astro employees or members of their families have been invited to join Astro Notes which each year presents a series of choral concerts.

Students Earn Scholarships

Thirty-one San Diego State College students have been awarded scholarships for the current semester by General Dynamics/Convair and General Dynamics/Astronautics.

Scholarships are $75 each. They are awarded on basis of aptitude, scholarship, and likelihood of success in a chosen field. They are renewable each semester of the undergraduate program if scholarship standards are maintained.

The program is administered by educational services at each division.

Scholarships went to:

General Dynamics/Convair—Larry E. Bennett, chemistry; Howard J. Bryant, physics; Carolyn S. Calhoon, mathematics; Martin D. Eichman, accounting; Dale E. Eyman, business management; Richard Ferrara, physics; Roland H. Fisher, mathematics; Eric J. Flourie, chemistry; Robert Allan Hartmann, physics; Robert H. Leatherwood, engineering; Allan D. Lemaire, civil engineering; James K. Lisec, personnel management; Arnold C. Nilson, physical science; Jon A. Orvick, chemistry; Louis L. Pechi, engineering; Michael F. Richardson, business management; Michael H. Spritzer, engineering; Rory J. Thompson, mathematics; Bruce H. Weber, chemistry.

General Dynamics/Astronautics—Neville G. Alexander, accounting; Fred O. Andrews Jr., accounting; Robert Becker, chemistry; Jean G. Collier, personnel management; Douglas F. Davis, physics; John J. Emrich, chemistry; William A. Hines, physics; William Y. C. Howe, engineering; Stephen L. Pentoney, industrial management; Robert R. Smith, mathematics; John K. Ware, mathematics; Richard S. Wayne, chemistry.

AUGIE HILL HEADS NEW TEST DEPT.

A. E. Hill, veteran General Dynamics executive, has been named superintendent of a newly-created test equipment department (Dept. 783) at Astronautics by E. D. Bryant, vice president-operations.



A. E. Hill

Hill and his new department will report to Frank B. Kemper, factory manager, electronics manufacturing.

Hill joined Astronautics in March, 1960, as night manager. He first came to Convair in 1940 and except for a period away held various executive positions, including that of chief tool engineer and works manager.



"WINTER EXPRESS"—Dubbed "Winter Wonderland Express" by ground crews during FAA slush tests at Atlantic City experimental center, Convair 880-M plows through tons of man-made "winter" on runway to prove safe landing and takeoff conditions.

Service Rep Beginning Fifth Year Counseling Navy on R4Y Craft

One lone field service representative, supporting Convair-built planes, has been bypassed by the jet age.

Don Weaver, based at Naval Air Station, Patuxent River, Md., is the only GD/Convair customer service man still in the field with twin-engine transports and the only GD/Convair man still assigned to the Navy.

He is going into his fifth year with the Fleet Tactical Support Squadron One (VR-1) which flies R4Ys, Navy cargo transports. And there's every indication that the Navy has found Weaver's service so valuable that they will extend his duty another term, said L. J. Bordelon, chief of transport service.

In fact, he recently received a letter of commendation from Capt. G. F. Rice, commanding officer of Anacostia Naval Air Station, as well as expressions of appreciation from Capt. Edwin L. Kiem, commanding officer of VR-1.

Within the last two years all GD/Convair field service reps, except Weaver, have been withdrawn from naval bases. Last to come home were Bill Lewis from North Island NAS, Calif., and Bill Anthony from Pensacola, Fla. (Bill Copeland was last rep in the field with Convair-Liners. He returned this spring from General Motors headquarters, Detroit, Mich.)

At the height of the R4Y program in 1956, Convair reps were stationed at Norfolk, Va., Glenview (near Chicago, Ill.), Patuxent River, Pensacola, and North Island.

R4Ys went to VR-1 in 1955 and soon became the work horse of the squadron. It was the first squadron incorporated in the Naval Air Transport Service in early World War II days and is presently responsible for non-scheduled passenger and cargo airlift in direct response to Commander-in-Chief, U.S. Atlantic Fleet.

Operations of VR-1 hinge on the principle of "immediate service, anywhere," writes Weaver.

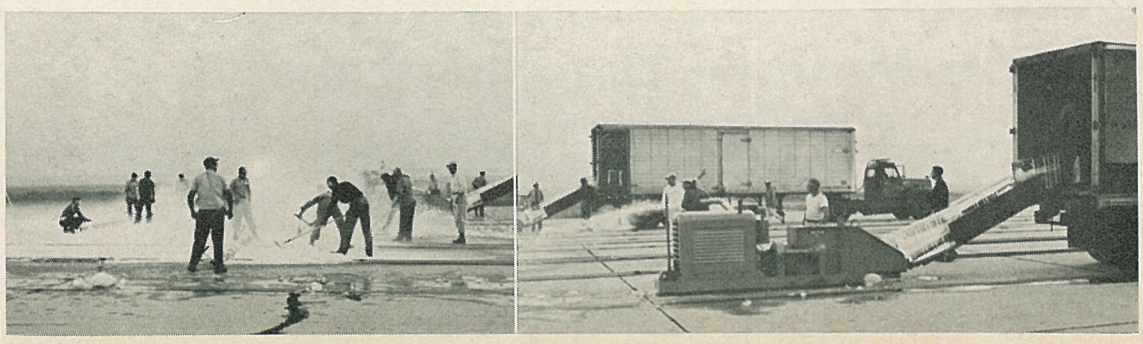
The eight, and sometimes as many as 15, R4Ys assigned to the squadron range to all parts of the country from Patuxent River. Most of the flying is along the East Coast with frequent routes to Newfoundland, Bermuda, Cuba, Puerto Rico. One R4Y is deployed now to South America to provide logistical support for a joint United States-South American naval exercise.

In the five years R4Ys have been based with the VR-1, they have helped amass over 126,000 flying hours and 26.7 million nautical miles. Each plane carries anywhere from 90,000 to 270,000 pounds of cargo and up to 3,000 passengers a month.

The squadron won the Airlant Safety Award for outstanding safety record in dual-piloted aircraft for 1960 and the Chief of Naval Operations' Safety Award for the four years prior to that.



AMONG FRIENDS—R4Y forms bulky background for friendly group of VR-1 associates at Patuxent River NAS, Md. From left are Lt. William Harper, quality control officer; Cdr. Myron Marlay, maintenance officer; Don Weaver, GD/Convair rep; Capt. E. L. Kiem, commanding officer; Lcdr. Sam Hopkins, assistant maintenance officer.



ICE FROSTING—Crews got up early (4:30 a.m.) to lay down crushed ice layers for Federal Aviation Agency's 880-M in recent bad weather testing. Ice arrived by van in night; went down chutes into snow-making machines (at right); was shot through nozzles onto runway; leveled and spread by 115-man crew divided into teams.

880-M Plows Into Man-Made Slush To Plot FAA Safety Regulations

A Convair 880-M plowed through tons of slushy ice out of season early this month, helping Federal Aviation Agency lay down winter safety regulations for jet transports.

And the corresponding tons of data collected at the National Aviation Facilities Experimental Center at Atlantic City, N. J., is being analyzed for such questions as: when is it safe for commercial airliners to land and take off in slush or standing water?

Glen Arner, General Dynamics/Convair field service representative on the site during runs which stretched over a couple of weeks in late September and early October, reported that the 880-M came through in good condition. The craft itself belongs to FAA. It was flown from San Diego in mid-September to FAA headquarters, Oklahoma City, Okla.

It took lots of ice, a couple of thousand tons, to lay down the man-made slush on a section of NAFEC runway for the 20 controlled tests. Because of the detailed nature and vast amount of information needed, takeoffs and landings could not be done in actual winter conditions with both plane and instruments at the mercy of capricious weather.

Even the time of day mattered. Quiet of early mornings, when the wind was low and the sun wasn't high enough to start melting ice, found the huge plane skidding to braked stops in cascading sprays of flying slush.

Runs were made at three different speeds—from about 135 to 185 miles an hour—in three different slush depths — one-half, one, and one-and-one-half inches.

It took 288 tons of ice to cover the 1,000-ft. long and 50-ft wide runway area (called "the pit") with an inch-and-a-half layer.

A fleet of vans hauled 300-lb. cakes of ice on location in the night. Ice slid down shoots into eight snow-making machines which can turn out 50 tons an hour. (The machines are commonly used in Texas farming areas for vegetable freezing.) Thoroughly crushed, ice was shot through nozzles, leveled, and raked. A crew of 115 men handled ice-laying operations in teams.

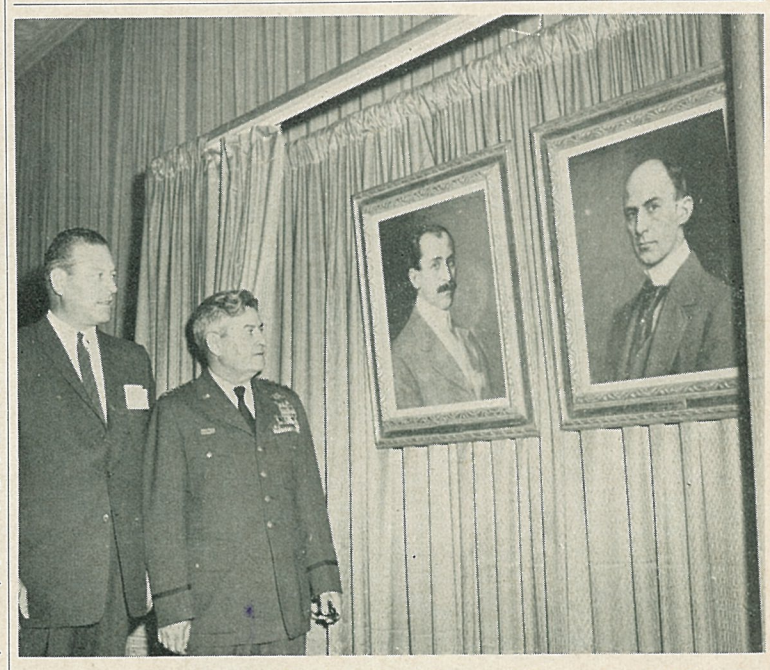
Entire program was jointly sponsored by FAA Aviation Research and Development Service, Flight Standards Service, and National Aeronautics and Space Administration.

Piloting the plane were Dick Richards, chief test pilot on the project and FAA engineering test pilot from Los Angeles, and Charles F. Stacy, chief 880 pilot for FAA from its air carrier operations division at Oklahoma City.

Results of data accumulated by cameras and test instruments within the 880-M will be compiled and studied as part of FAA's continuous flight safety testing program aimed at preventing jet transport accidents.

TEMPLE ATTENDS SAFETY CONGRESS

Fred Temple, General Dynamics/Fort Worth chief safety engineer, attended the National Safety Congress and American Society of Safety Engineers conventions held concurrently in Chicago Oct. 16-20.



FOR AF ACADEMY—On behalf of General Dynamics, C. Rhoades MacBride, executive vice president, left, recently presented two original oil paintings of Wright Brothers for hanging in Air Force Academy, Colorado Springs. Presentation was made at Air Force Association convention in Philadelphia to Gen. Curtis LeMay.



AT THE FAIR—Over 1,000 General Dynamics people from San Diego-located divisions viewed latest equipment and methods now on market for careful handling of materials at one-day Electronics Handling Fair, sponsored by General Dynamics/Electronics.

Electronics Fair Draws Thousand To See Material Handling Exhibits

Modern equipment for protection of electronic parts was on display this month (Oct. 12) at San Diego at a one-day Electronics Handling Fair, first of its type sponsored by Military Products Division of General Dynamics/Electronics.

Over a thousand General Dynamics people from three San Diego divisions, whose interests are concerned mainly with proper handling of materials, filed through the display area on Bldg. 4 mezzanine, GD/Convair Plant 1, to see exhibits of ten vendor representatives. All companies showing products were selected by GD/Electronics production engineering as most representative of latest-type handling equipment for specific purposes.

"We wanted as many as possible to have a chance to see new kinds of materials and methods available for protecting products," said J. P. Morris, manager of GD/Electronics production engineering, sponsoring group.

The fair was opened to all operations, engineering, quality control people from GD/Convair, Astronautics, Electronics — both Military Products and Information Technology Divisions.

"This is but one phase of our ever-continuing campaign to improve our material handling methods," pointed out H. L. Gates, operations manager of GD/Electronics.

"We build high-quality products, and we want to keep them that way. If we don't take pains to preserve them in storage and during transit, we lose all we've gained. And, as our products become more and more refined, thereby requiring a higher degree of reliability and quality control, careful handling becomes increasingly important."

Items such as disposable plastic gloves and aprons which tear off huge rolls; plastic "tote" boxes—containers of all sizes and shapes — bags, envelopes; file cases with separately lined compartments; "clean" room equipment; soldering equipment for encapsulation were prominent among displays.

Represented at the Fair were: C. S. Goodale Co., Winn Supply Co., both of San Diego; Storage Rack Co., Los Angeles; Specialty Converting, Inc., El Monte; Dolliver & Co., Los Angeles; Claude Michael, Inc., Glendale; Electronic Engineering Co. of California, Santa Ana; Agnew-Higgins Co., Stanton, Calif.; Cashin-Tipton & Associates, San Diego; Spaulding Fibre Co., Inc., Tonawanda, N.Y.

A. L. Weinstein of GD/Electronics production engineering made arrangements for the exhibits as Fair coordinator.

Delta Will Start 880 Service From San Diego East Next Week

Convair 880 passenger service will connect San Diego to southeastern points this weekend when Delta Air Lines begins flying a Convair jet airliner over a new schedule Oct. 29.

The 880 schedule will provide San Diego with service to Dallas, Fort Worth, Texas, and Orlando, Fla. Connections at Dallas and Fort Worth will be available for New Orleans, Atlanta, and Birmingham-bound passengers.

Eastbound, the 880 leaves daily at 10:10 a.m., stops in Los Angeles, then flies nonstop to Dallas, arriving at 4:20 CST, and reaches Orlando at 7:52 p.m. EST. Westbound, the flight leaves New Orleans at 7:10 a.m. CST, Fort Worth at 8:50 a.m. CST, and reaches San Diego at 9:40 a.m. PST.

Delta Air Lines was the first carrier to place Convair 880s in passenger service on May 15, 1960. It now has 12 Convair 880s operating over its network and another four on order for 1962 delivery.

QUALITY CONTROL TALKS SCHEDULED

Three General Dynamics quality control experts will take part in the 11th national conference, Aircraft and Missile Division, American Society for Quality Control in Los Angeles, Nov. 9-10.

J. Y. McClure, General Dynamics director of reliability and quality control, will speak on "Quality Control from the Management Viewpoint," at the Nov. 9 production quality control session.

David Archibald, GD/Astronautics manager of quality control, will moderate the design reliability session the same day. P. I. Harr, reliability control director at GD/Astro, will talk on "Test Control" at the Friday field service maintainability session.

15,000 See Spacecraft That Circled Earth

Over 15,000 visitors, plus as many or more employees, viewed a special display of a Mercury spacecraft this month at General Dynamics/Astronautics in San Diego.

The spacecraft is a "veteran" of two launchings by Atlas. On April 25 it was recovered after a successful separation from a missile destroyed 40 seconds after lift-off due to a programmer failure. On Sept. 13 Atlas 88-D, launched by an Astronautics crew at Cape Canaveral, sent the spacecraft on a 109-minute flight around the earth. It was recovered from the Atlantic.

Astronautics installed the spacecraft in Bldg. 2 lobby (after a bit of doing which included removing and replacing two glass panes and a steel beam) and invited the public to view it after normal work hours.

Wesley Brenton of NASA presided during public displays and helped play a special continuous tape recording of countdown talk during launch of the missile. The entire tape was narrated, save for actual crew voices, by Bill McGaw of Astro's motion picture and television section.

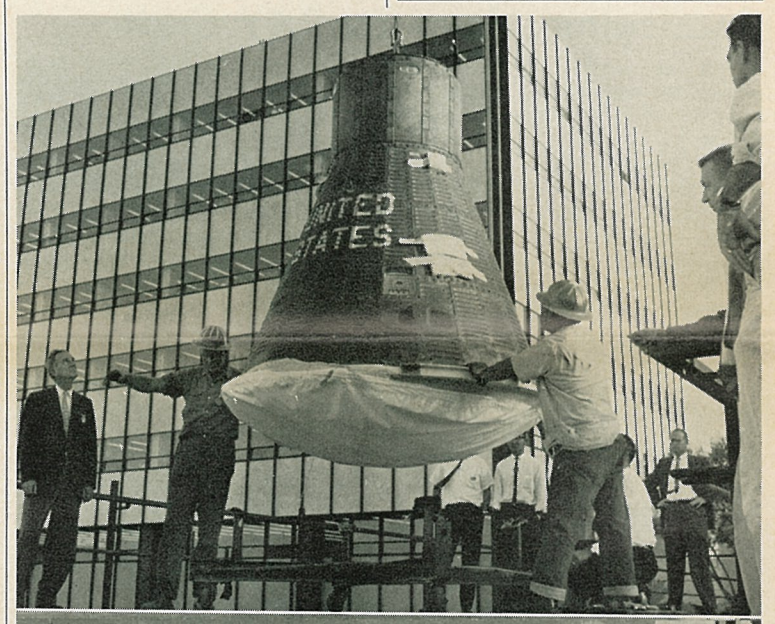
One unusual portion of the display, never seen by the public before, involved color weather reconnaissance shots taken from the capsule 100 miles above the earth. Prints, made by Astro's still photographic laboratory, showed the "eye" of Hurricane Esther over the Atlantic, the Sahara Desert, Indian Ocean with monsoon clouds and the west coast of Africa.

Also on display was a scale model of the Project Mercury Control Center at Cape Canaveral, designed and built by General Dynamics/Electronics, including an eight by 26-foot wall map and 12 display-consoles.

Security Society Headed by Higgins

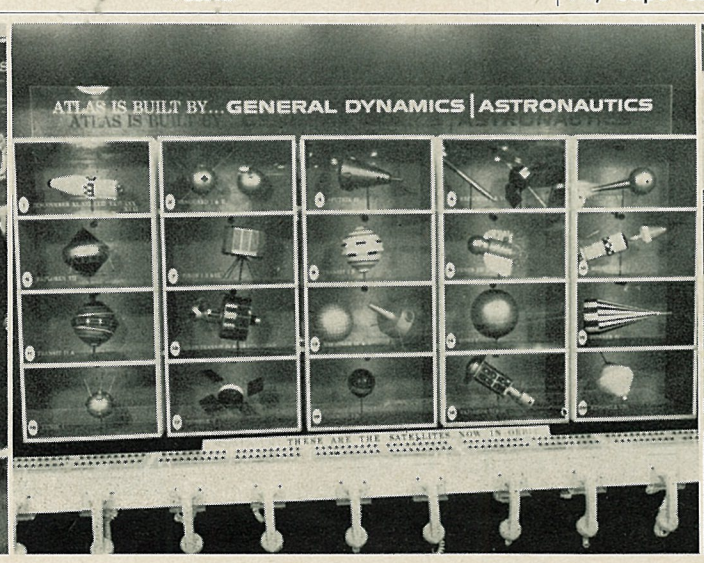
George D. Higgins, General Dynamics director of industrial security, this month was elected president of the American Society for Industrial Security during the annual national seminar in Detroit.

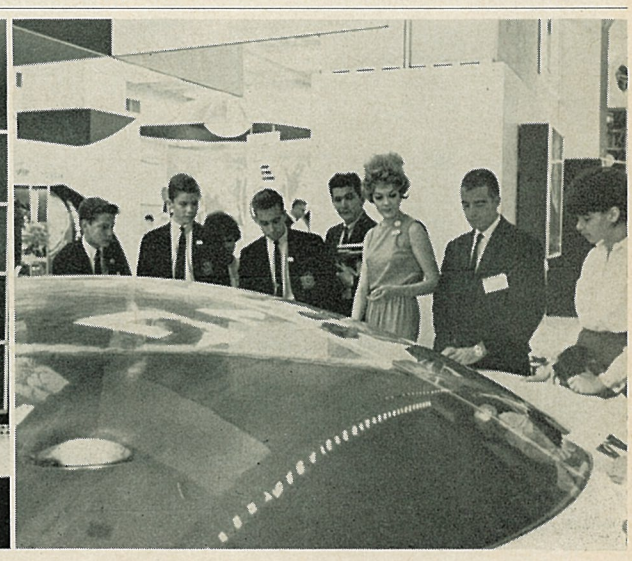
Higgins, who has held posts of secretary and treasurer in past years, was a member of the society's founding committee in 1955. Eric Barr, manager of industrial security for Electric Boat Division, is a former president and past chairman of the board. The organization lists 2,500 members in 58 chapters across the country, with representatives in all major industries.



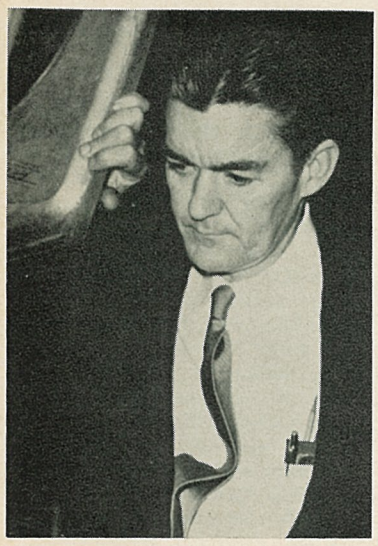
CIRCLER—Atlas-Mercury Spacecraft that circled earth Sept. 13 was displayed at GD/Astro plant in San Diego this month. In top photo, it is lowered onto dolly. Below, GD/Astro crew at Complex 14, Cape Canaveral, pose after it was retrieved from Atlantic.







IMPRESSIVE—GD/Astro exhibits at American Rocket Society convention in New York City "wowed" thousands and were often surrounded by several rows of curious. At left, visitors try out "robot psychologists" while in center are models of U. S. satellites now in orbit. (Recorded facts on each could be learned by picking up a telephone!) At right is view of space "pin-ball" machine, one of most popular displays.



LOSS — Frank Sinclair, longtimes sales executive at San Diego, died suddenly Oct. 12.

FRANK D. SINCLAIR, PILOT AND SALES EXECUTIVE, DIES

Frank D. Sinclair, assistant manager of commercial sales for General Dynamics at San Diego, veteran Air Corps and civilian pilot and widely traveled sales executive, died suddenly Oct. 12 at San Diego.

He leaves his wife, Laura Jane, two daughters, Candace and Victoria, and a son, Frank D. Jr.

Sinclair joined Convair in 1947, bringing with him a broad background of aviation experience and a colorful career as an aviator. He was born in Wilkinsburg, Pa., educated at University of Detroit, and graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, in 1932. He served two years as a second lieutenant, duty including the Canal Zone. He left the service to become chief flight instructor for the Colombian government.

Returning to the States in 1955 he joined Seversky Aircraft as chief pilot, selling and demonstrating new aircraft. Later, with Douglas Aircraft (1940-45) he was loaned for a year to the Government of China (1942) to advise Dr. T. V. Soong, then foreign minister, on equipment for the Chinese Air Force. During that tour he made two trips to China and among other tasks surveyed transportation routes over the "Hump" and made recommendations for increased payloads.

Following a year with TWA Sinclair joined Convair as a sales representative and was intimately associated with sales efforts on Model 240, 340 and 440 programs, both at home and abroad.

B-58 No. 3 'Retired' To Chanute Duty

B-58 No. 3, which made its maiden flight May 6, 1957, has retired to Chanute AFB, where it will be used for maintenance training purposes.

The third test Hustler to be flown, No. 3 was used primarily for stability and control testing. It was also used for testing of components in the bomb-nav system and autopilot before being put in service at Edwards AFB in September, 1959.

At Edwards, No. 3 was used in production boom data tests and non-frangible wheel tests.



Venus Flight To Use Atlas

Plans for utilizing an Atlas-Agena B launch vehicle for sending a Mariner spacecraft on a flight to the vicinity of Venus have been announced by National Aeronautics and Space Administration (NASA).

Slated for "mid-1962" the launch will occur when the earth and Venus are in the most favorable positions. This flight will provide an early test of basic equipment which will be used in later interplanetary flights.

Earlier, an Atlas-Centaur launch vehicle had been scheduled for this space probe. However, NASA indicated a change was being made in the interest of increased reliability to be expected from the greater number of Atlas-Agena B rockets which will have been fired before the Venus flight.

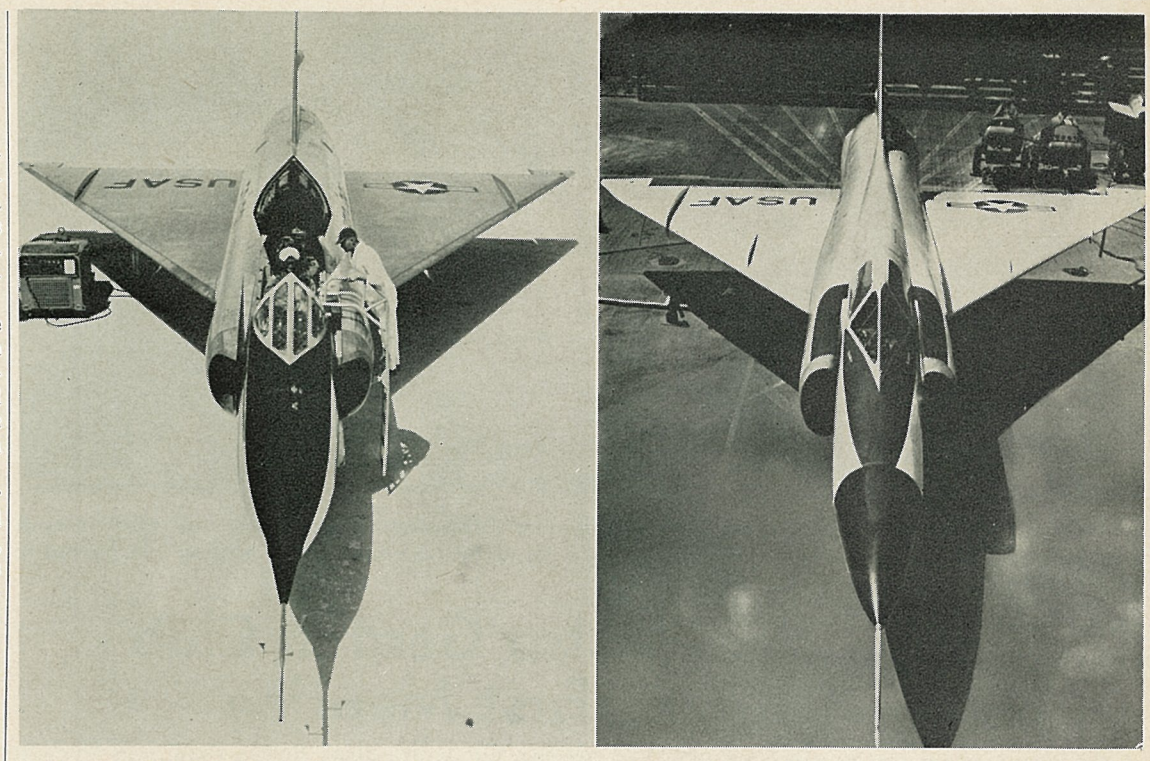
General Dynamics / Astronautics manufactures the Atlas launch vehicle for NASA and also builds Centaur.

Weighing about 400 pounds, the Mariner spacecraft may carry such equipment as that for investigating magnetic fields in space through a fluxgate magnetometer; for conducting radiation experiments to detect and count energetic particles from the sun and from outside the solar system; or a micrometeoroid detector and a radiometer to scan the surface of Venus for temperature distribution.

GD/Astro Man Cited For Honors Course

Dale G. Walton, major, USAR, of General Dynamics/Astronautics has been cited by R/Adm. R. E. Rose, USN, commandant of the Industrial College of the Armed Forces for completing that institution's correspondence course with honors.

The course, "The Economics of National Security," is based on a curriculum offered for active regular and reserve officers, government officials and selected civilians.



SPEEDY SHAPE—Prototype YF-102, left above, fell short of Mach 1, but when pinch-waist "figure" was adopted (right above) plane smoothly passed sound barrier on second flight.

Principle of 'Marilyn Monroe' Figure Applied to F-102, Put it Past Mach 1

(No. 70 in a continuing history of General Dynamics products deals with speed problem that led to "Marilyn Monroe" shape for YF-102 delta.)

Hasty post-war demobilization (1946-47) left the country almost undefended from air attack. There were only a few obsolescent coastal radar installations, one squadron of P-47 day fighters, one of P-61 night fighters.

Events abroad beginning in late 1947 (especially the appearance of the Russian TU-4 bomber) showed the need for a defense able to meet intercontinental attack by high-performance aircraft. An interim system was organized around the F-89C and F-94B all-weather interceptors and the "Lash-up" radar network. To develop a better defense by the target year 1954, the aircraft and electronic industries were asked to participate in a conference at Air Force headquarters in May, 1949.

Here a new approach generated by Gens. Muir S. Fairchild and Gordon P. Saville was introduced. Instead of issuing rigid specifications defining the equipment wanted, the Air Force stated its problem and asked industry to submit ideas leading to an integrated "weapons system." It was agreed that development of the electronics for a new interceptor would take longest and should start first. A competition led to selection of a Hughes Aircraft Co. design in May, 1950. The airframe competition followed at once. In June, 1951, Convair, Lockheed, and Republic were chosen to proceed with preliminary development. In September the Convair delta design was picked for the job and designated F-102.

The system originally was to consist of an airframe powered with the projected Wright J-67 engine (expected to pack a thrust of some 15,000 pounds) and the Hughes MA-1 fire-control equipment, so sophisticated it could take over most pilot functions, the Hughes Falcon (GAR-1) homing missile, and a second battery of folding-fin rockets. It soon was seen that not all the advanced features could be developed in time, and a lesser interim program was substituted. This included the F-102A plane, powered with the smaller Pratt & Whitney J-57 engine, and the Hughes MG-3 system, a partial development of the MA-1. The MG-3 could locate the target at long range, direct the pilot on the correct lead-collision course, and at the proper moment prepare and fire missiles or rockets automatically.

Outwardly, the F-102A looked like a big brother of the XF-92A, except for a slim nose and lateral air intakes flanking the cockpit. It was far different structurally — a strong skeleton of milled aluminum spars and longerons, covered with aluminum skins. The plane was designed to carry its full load internally: fuel in the wing spaces, more than three-quarters of a ton of electronic gear in the fuselage, and the Falcon missile in concealed ventral bays. Rockets were fitted into channels contained in fast-acting missile bay doors.

Engineering on a preliminary order for the ten YF-102s began in April, 1952, and the first plane was completed Oct. 15, 1953, making its maiden flight Oct. 24 at Edwards AFB, Calif. Engineers already were redesigning the fuselage, however. It had been discovered with dismay, earlier in the year, that the YF-102 would not be able to push past the sound barrier. This was demonstrated by a test program with wind tunnel and rocket-powered models. In hopes of saving the plane, Convair and Air Force engineers decided to apply "area rule," a principle discovered in 1952 by Richard T. Whitcomb, NACA aerodynamicist.

Whitcomb's studies indicated that in slender, short-winged aircraft the drag rise near Mach 1 depends primarily on the distribution of cross-sectional areas as measured along the plane's axis from nose to tail. Where the rate of change in area is rapid, stronger shock waves (and increased drag) result. Whitcomb found he could greatly reduce transonic drag by indenting the plane's body where the wings were largest. This prevented rapid change in the total cross-sectional area.

The third YF-102 on the line was modified according to these principles. Its waist was pinched along the wing and its nose was slimmed and lengthened. Additionally, the plane was lightened by whittling away some of its excess structures (no longer needed, due to substitution of the light J-57 engine for the J-67 originally planned). The modified plane, redesignated the YF-102A, had a shakedown flight Dec. 20, 1954, and the following day easily exceeded Mach 1 in level flight.



AA "STUDENTS"—First American Airlines group completing airlines' own 990 orientation course held at GD/Convair plant were (from left) H. L. Patterson, Tulsa, Okla.; D. Breeding, Washington, D.C.; C. Raffey, Boston, Mass.; L. Ekberg, Cincinnati, Ohio; H. Goers, St. Louis, Mo.; B. Naylor, Newark, N.J.; J. D'Angeli, Tulsa; H. Brockel, La Guardia Field, N.Y.; G. Crozier, Idlewild, N.Y.; O. Gilbert, La Guardia.

American Airlines 'Graduates' Key Personnel in 990 Course

Second in a series of American Airlines "seminars," taught by their own instructors at General Dynamics/Convair, will end today (Oct. 25).

Before the end of December, five groups of key personnel from all points of the American Airlines system will be at the San Diego plant for "graduate" work on the Convair 990.

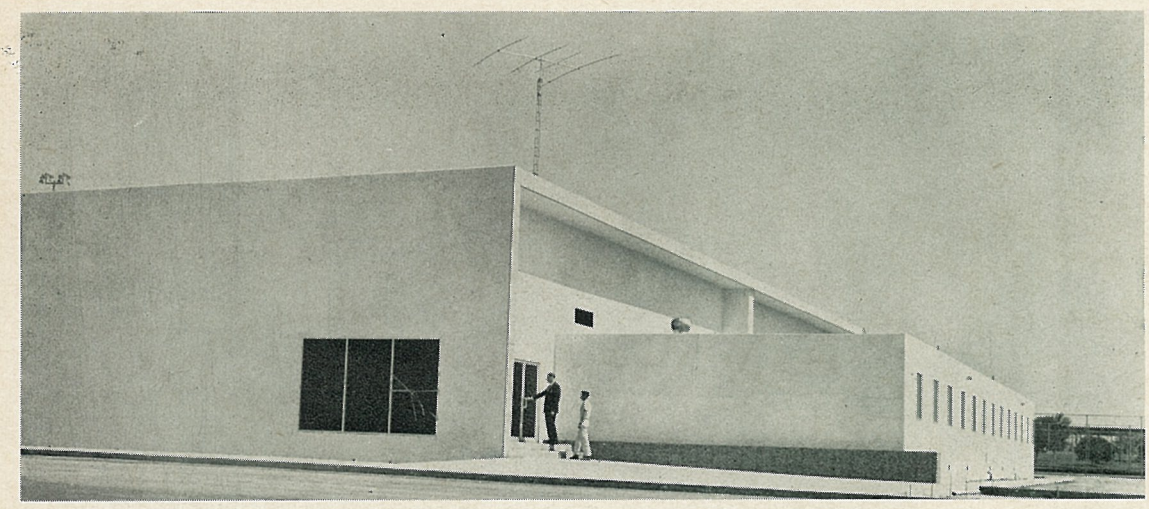
The capsule courses, called American Airlines Management Orientation, are bringing maintenance, engineering, and provisioning managers to San Diego to see the actual plane, in production and on the flight line. GD/Convair customer service is standing by to assist in any way possible, making plant facilities available and supplying specialists for information on any particular subject.

Program coordinators and lecturers of this series are H. L. Patterson and J. D'Angeli of American Airlines training section, who have conducted ground school courses at AA's main base, Tulsa, Okla. Both received their initial 990 training in GD/Convair customer service maintenance courses. Most of the men attending the three-day courses have already received American Airlines classroom training.

Several hundred AA personnel already have passed through the GD/Convair standard maintenance courses during the last year. This GD/Convair-provided portion of 990 training has been completed, however, GD/Convair instructors will be on hand to assist in any way needed during the American Airlines training sessions at San Diego, stressed L. J. Bordelon, chief of transport service.



"If you'll recall . . . the agreement was for better or for worse . . ."



HANDSOME—Scene is at main entrance to Astronautics Recreation Association's new clubhouse at San Diego. North and south wings have been in use for some time and center section will be ready before end of year. Much of labor was volunteer.

Motorcycle Riders Count Award Points

Final opportunity for members of ARA Motorcycle Club to earn points toward the club's "Rider of the Year" award comes with the group's meeting at 7:30 p.m. Nov. 1 in the ARA Clubhouse.

The "Rider" trophy is presented annually on the basis of points earned in club competitions and through meeting attendance.

GD/Astro Garden Club Plans First Meeting

A new ARA activity will be introduced to GD/Astro employees and members of their families when ARA Garden Club meets for the first time at 7:30 p.m., Nov. 8.

Slated for the Floral Assoc. Bldg., Balboa Park, first meeting will feature guest speaker Curtis Fisher of California Spray Chemical Corp., who will show a movie on rose culture.

A variety of door prizes and other gifts will be given away during the course of the evening and refreshments will be served. A question and answer period will be held to help solve gardening problems of those in attendance.

The GD/Astro group is being organized by Everett Henderson, former president of the GD/Convair Garden Club. Future meetings will cover topics such as landscaping, soil improvement, lawns, citrus culture, etc. Also included will be lessons in flower arrangement and corsage making.



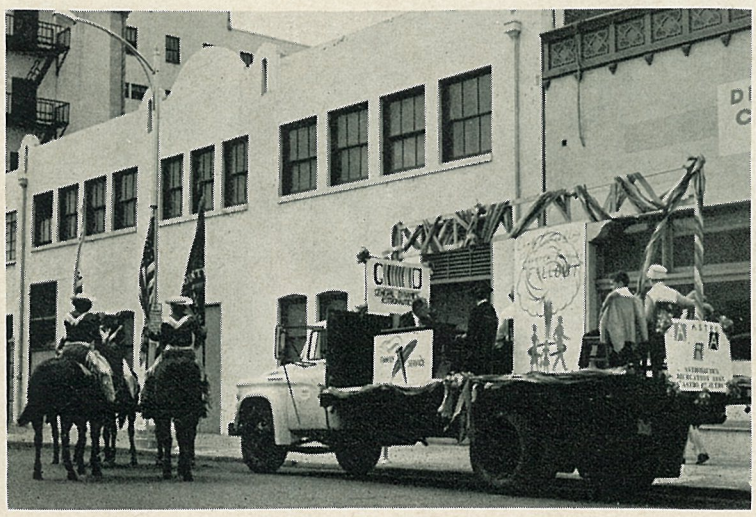
LOVELY "LADIES"—Carolyn Merriam examines unusual Cattelya orchid "Abigail Anderson" as prelude to first meeting of ARA Garden Club. Topics for new organization range from orchid culture to care of lawns.

High Winds Wreck Astro Players' Parade Float But Show Goes on With Last-Minute Push

Although their first production was "gone with the wind," the show went on for ARA Astro Players drama group who designed and built the Family Service float in the recent United Fund "kick-off" parade.

High winds the day of the parade made tatters of the float built the previous evening by members of the ARA group. In a final-hour effort, George Lowin, club director and a handful of parade participants went to work, minutes before parade time, using crepe paper, free-hand art, and a good deal of determination to remake a presentable entry.

Riding the float which carried the atom-age theme "Early Counseling Prevents Family 'Fallout,'" were Art Wright, John Yellick, Millie Rankin, and Cydney Garrison and children.



REMADE—Astro Players' parade float "blew up" en route to parade route, but determined Astro band put it back together, just in time.

Mgmt. Control Post Goes to F. D. Robbins

Frank D. Robbins, formerly deputy Air Force Plant Representative at General Dynamics/Astronautics, has joined Astro as assistant to E. D. Bryant, vice president-operations.

A native of San Diego, Robbins previously worked for Convair from 1940-44 and 1946-50 following U. S. Navy duty between these periods.

His Air Force civilian jobs have included assignments at both GD/Convair and GD/Astro. He has worked at the latter since 1957 as a supervisor in contracts and administration, prior to becoming deputy AFPR in 1959.

Bryant has indicated Robbins will work in management control for operations, program management and performance to schedules.

Purchasing Agent On Research Named

A veteran military and civilian procurement specialist, J. H. Lewis, has joined General Dynamics/Astronautics as purchasing agent for research and development site activation.

Assigned to Dept. 814, Lewis reports to D. D. Knapp, general purchasing agent, and replaces I. T. Emley who has resigned his position.

A graduate of Stanford University, Lewis comes to Astronautics from North American Aviation where he was executive adviser to corporate contracts proposal section. Previously, he worked five years with the Air Force Air Materiel Command as deputy chief of foreign procurement.

ASTRO GIRL WED IN DYESS CHAPEL

DYESS AFB—Lesli Carl, GD/Astro girl assigned to Astronautics operations here, last month became the bride of Richard W. Sirstad of the Air Force. The wedding was in Dyess AFB chapel.

Save Material — Don't Throw Your Job Away!

DOCUMENTATION CHAPTER FORMED

General Dynamics/Convair and General Dynamics / Astronautics people involved in any form of documentation are invited to attend an organization meeting of a San Diego Chapter of the American Documentation Institute.

The initial meeting for election of officers and planning for a year's agenda will be tomorrow (Oct. 26) at 7 p.m. in the Astro reception building presentation room, second floor.

The Institute, incorporated in 1937, provides a form of discussion, publication, and critical analysis of all elements connected with communication of recorded specialized information, explained Keith Blair, GD/Convair chief librarian. The organization is of especial value to scientists, engineers, administrators, information specialists, data processing specialists, and librarians interested in the exploding technology of documentation, he continued.

Information and membership applications are available from Blair, ext. 1543, Plant 1; and L. Canter, chief librarian at GD/Astronautics, ext. 1073.

Renovated Cafeteria Opened for Business, Kitchen Streamlined

After a three-week diet of sandwiches and easily-transferable side-dishes, GD/Astro and Convair employees at Plant 2 are being served by a completely renovated, streamlined kitchen.

Plant 2 cafeteria kitchen, closed Oct. 9, reopened Monday for normal business.

GD/Convair plant engineering, under an Air Force contract, coordinated and supervised installation of new stainless-steel sinks, four huge ovens, a large garbage disposal and provided a sparkling green and white paint job.

Al Damarus, maintenance foreman, said modern equipment should facilitate greater speed, ease and efficiency in cafeteria handling and service.

Auxiliary to Start Beginning Bridge

A series of beginning bridge lessons for women will be sponsored by Astro Wives' Auxiliary starting Nov. 2 in ARA Clubhouse.

The course is open to wives and dependents of GD/Astro employees, and consists of 12 lessons. Classes will meet at 10 a.m. Thursdays, for two and one-half hours. Total cost of the series is $12.50.

Instructor is Ralph Woolley, La Mesa professional. Additional information and reservations may be obtained by calling Garnet Forquer, AT-4-7982.

Shooters Brave Rains, Finish Police Match

Although a scheduled short national match was cancelled due to heavy rains, 23 members of ARA Pistol Club braved threatening skies to take part in club matches Oct. 8.

A .22 police course match completed before heavy downpours found Ralph Sanderlin with 295, and Roland Schneider with 292 leading master class shooters.

A. B. Carlson won expert class with 277, followed by Don Smock with 272, while Mort Williams edged Margaret Slater five "Xs" to three in a sharpshooter round tied at 273.

Vern Weaver, scoring 247, and George Slater with 240 were top shooters among the marksmen.

Machine Shop Tops Contest

Machine shop (Dept. 731) was top unit competing in General Dynamics/Astronautics safety and housekeeping contest for September, with no cleanliness, material handling, fire or safety violations reported.

Twenty-one departments participate in the monthly contests which are scored on a weighted violation-per-employee scale by safety section of industrial relations (Dept. 130-8).

Winning safety "firsts" in September were jigs and fixtures (Dept. 451), electronics research and development (Dept. 782), support center (Dept. 344), tool and die (Dept. 452), and major assembly (Dept. 758).

Also, missile checkout (Dept. 773), processing (Dept. 733), support supply (Dept. 331), inspection (Dept. 143), tool service (Dept. 460) and engineering test labs (Dept. 560).

Ubben Assigned To Walker Post

M. R. "Rex" Ubben, formerly General Dynamics/Astronautics operations manager at Forbes AFB, Kan., has taken over a similar post at Walker AFB, N.M.

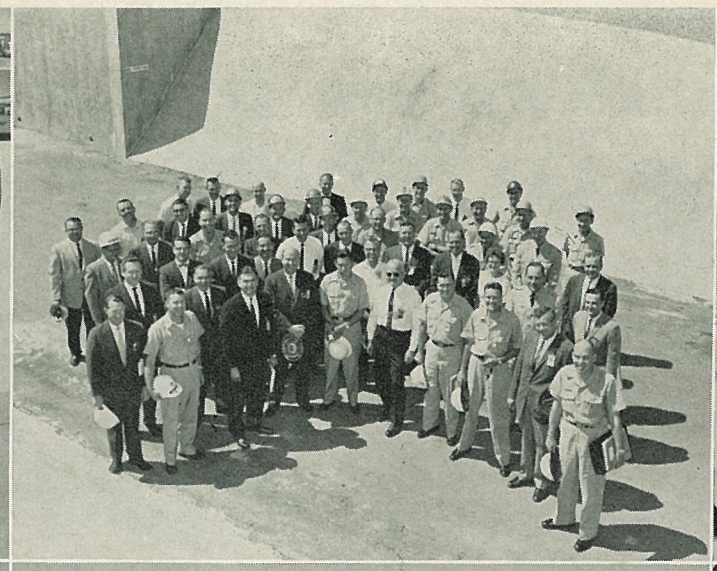
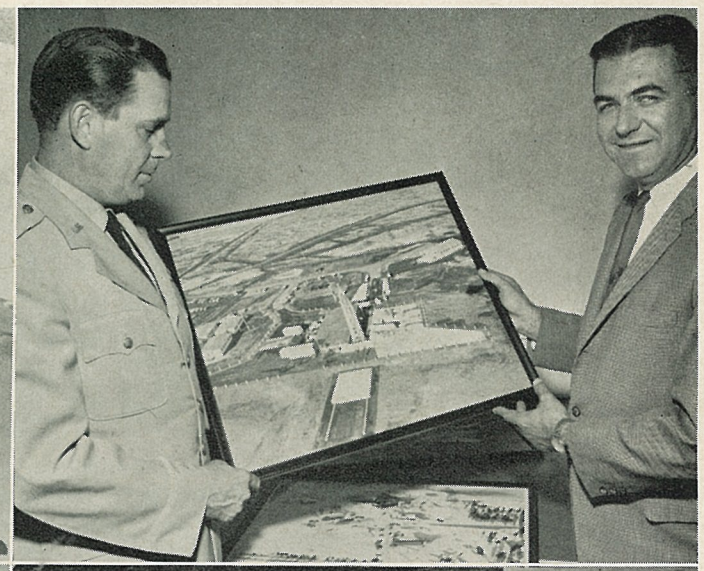
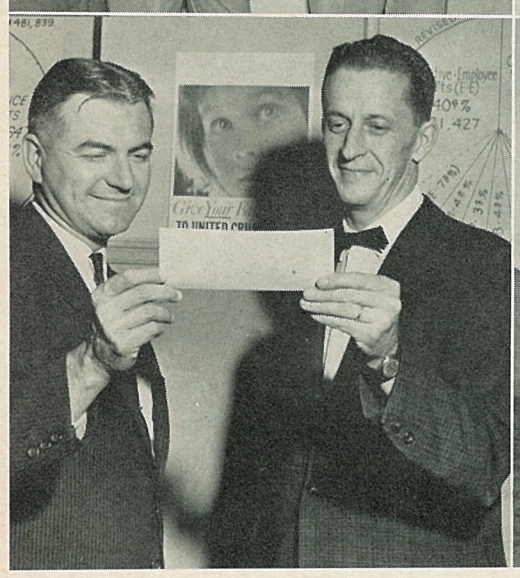
Ubben replaces A. Calman Jr. who has returned to San Diego to take a post within the product support department.

A native of Circleville, Kan., educated in Nebraska, Ubben joined Convair in 1950 as an electronics mechanic. He moved into supervision shortly thereafter and in 1955 shifted to the Palmdale flight test operation as a foreman. He was later elevated to general foreman and was chief of field operations before transferring to Astronautics.

Ubben assumed the post of Forbes AFB operations manager in 1960 and has guided that installation through the majority of tasks associated with activation of Atlas facilities.



BEFORE CHANGE—M. R. Ubben, seated left, is new GD/Astro operations manager at Walker AFB. He replaces A. Calman Jr., standing left, now with product support. L. F. Lau, seated right, filled in for Ubben while later completed work at Forbes AFB, and is now on staff of E. J. Huntsman, standing right, base activation manager for "E" and "F" bases.



FAIRCHILD FAREWELL—GD/Astro personnel leaving Fairchild AFB with completion of Atlas activation tasks can look back on many accomplishments. At top left Larry Kolb presents safety trophy to Col. L. L. Jella, commander, 567th SMS, and Maj. G. C. Greaves, safety officer. It marked year of effort without disabling accident. Top center: key personnel involved in "selloff" at Fairchild pose for group photo. Top right: As parting gift, W. F. Chana, right, presents framed picture to Col. Jella. Con-Trib-Club was active during Astro's months at Fairchild. Lower left, Chana presents check to Ted Burger of Spokane United Crusade. Lower center: another Con-Trib gift was 22 passenger bus to Morning Star Boys Ranch. Rev. Marvin Lavoy is about to board, watched by Astro's Cliff Clickner, B. M. Gipson, George Gompertz, L. H. Main, C. C. Cordes. Lower right: L. H. Main delivers Con-Trib toys to Shriners Hospital for Crippled Children.

Astro Crews Leaving Fairchild 'Bequeath' Fine Safety Record

FAIRCHILD AFB — General Dynamics/Astronautics employees here have passed on to members of the 567th Strategic Missile Squadron a remarkable safety "legacy."

It reflects virtually a full year (364 days) of work in activating Atlas facilities here without a lost time accident. During this period employees worked more than 3.5 million manhours, while 135 company vehicles were logging over three million miles.

W. F. Chana, GD/Astronautics operations manager, brought out these facts in a special ceremony involving presentation of an award for the 567th SMS, the Air Force unit manning Atlas facilities here.

The trophy consisted of a display model of the Atlas missile with inscriptions on both model and base. They read:

"567th Strategic Missile Squadron Safety Award, Fairchild AFB, contributed by General Dynamics/Astronautics, 1960-61. This trophy represents safety achievement begun in installation and checkout-phases of the Atlas program at Fairchild AFB. May the accomplishments of that time be carried on in the operational phase."

Chana and Larry Kolb, Astro safety engineer here, turned the model over to Col. L. L. Jella, 567th commander, and Maj. G. C. Graves, squadron safety officer.

Col. Jella indicated the trophy would become a rotating award among launch complexes.

Chana also lauded the work of Kolb and A. W. Billitti, former Astro safety engineer, now at Dyess AFB, for their work as well as all Astro employees who made safety accomplishments possible.



BEAUTIES — GD/Astro girls Beverly Sears, left, and Diane Baca, right, along with Lucy Signorelli and Trudy Gardner, were contestants in Vandenberg AFB Fire Prevention Queen contest recently.

Many Community Donations Mark Astro Time at Fairchild

FAIRCHILD AFB — General Dynamics / Astronautics employees departing this base on the conclusion of activation tasks can look back on a banner year in which they have contributed greatly to community welfare groups.

Through efforts of Con-Trib-Club, employees, in the past year alone, have given more than $13,800 to charitable groups.

In addition, a 22-passenger school bus was donated to the Morning Star Boys Ranch along with a washer and dryer. The bus project involved many groups and individuals who worked in their spare time to make it possible.

Originally, the bus belonged to a local school district. It was purchased with Con - Trib - Club funds and completely overhauled and repainted by employees working in their spare time.

Cliff C. Clickner, employee services representative, presented the bus to Rev. Marvin F. Lavoy of the Ranch. Aboard was a large supply of winter bedding material to be used by children there.

In addition to the bus, washer and dryer, and bedding contributions, employees, over the past year, gave:

Some $300 to the House of Charity; $150 to the Shriners' Hospital for Crippled Children; $200 to the Spokane Muscular Dystrophy Foundation; $250 to the Eastern Washington Society for Crippled Children and Adults; $75 to the National Cancer Society; $75 to the National Society for Mental Health; $500 to the Inland Empire Chapter of Arthritis and Rheumatism Foundation; $400 to the New March of Dimes; and $350 to the Parents Cooperative Society.

Largest contribution was $7,800 in 1960-61 and $3,700 in 1961-62 to the Spokane County United Crusade.

Halloween Costume Dance Sponsored by Dyess Wives Club

DYESS AFB — GD / Astro Wives' Club here announced a Halloween costume dance to be held from 8 to 10 p.m., Oct. 30 at Dyess NCO Club.

Dancing to music by Mel Sadler's band, and prizes for the best costumes are planned. Tickets at $2 per couple will be available at the door.

A dance demonstration presented by Thornton Dance Studio of Abilene was featured at the group's October business meeting. Nominations for club officers were presented, and included Mrs. George Stengle, president; Mrs. J. P. Bagrow, first vice president; Mrs. Clair Thompson, second vice president; Mrs. Ralph Chase, secretary; and Mrs. Robert Porter, treasurer.

On Oct. 17, the club sponsored a card party at the NCO Club. Mrs. A. L. Peyton was in charge of bridge, and Mrs. Ray Mulinax coordinated pinochle play.

Hold the Phone, Nurse, Swatters to Rescue!

ALTUS AFB—Non-productive material requisitions totaling thousands of dollars are issued monthly at most GD/Astronautics operations at Air Force bases, but one issued recently was off beat.

It read: "Item—1; quantity—24; description — fly swatter (plastic type)." It was originated by N. I. Manly Jr., chief of industrial relations.

It seems that first aid stations at launch sites are located in quonset huts minus screens. Nurses requested swatters.






BASE HIGHLIGHTS—At left is scene during Management Club meeting at Vandenberg AFB. From left, P. T. Gardner, acting operations manager; W. W. Withee, Astronautics vice president; Maj. Gen. Joseph J. Preston, 1st Strategic Aerospace Division commander; Col. Joseph J. Cody, commander, 6565th Test Wing, SSD; Don Fagan, VAFB club president. Center: at Site 2, Schilling AFB, C. W. "Bud" Dale presents safety and good housekeeping trophy to Frank Jepson, UMS-A supervisor. At right, Neal Mullins receives award for winning golf tournament at Schilling from Charles Bernard of Astro Recreation Association.



JOINT EFFORT—General Dynamics' research engineers E. A. Bates (far right) and Edwin Campbell (fourth from right) have supervised and coordinated a GD/Convair based team of aerospace industry representatives in development of APT (Automatically Programmed Tool). Secretaries Joyce Palma and Nancy Kuhn (second and third from right) have been on loan from GD/Convair.

Computer 'Language Barriers' Attacked by Aerospace Team

Fourteen aerospace representatives now based at General Dynamics/Convair are developing a "universal language" for application of computers to manufacturing problems.

Called APT (Automatically Programmed Tool), the program is a joint effort by Aerospace Industries Association (AIA) member companies—General Dynamics included — to standardize computer programs and thus facilitate interchange of manufacturing data in the form of computer "brain tape."

"We have something of a 'language barrier,'" E. A. Bates, GD/Convair senior research engineer and national APT coordinator, explained. "Different companies have their own 'dialects' when it comes to preparing computer tape for direct production machines."

Bates said that "even within General Dynamics there were 'language differences' so that interchange involved expensive and time-consuming 'translations.'"

Establishment of APT allows General Dynamics to interchange work effectively, simply and quickly.

Bates, who received his B.S. from New York State College of Ceramics, Alfred University, and his M.S. in chemistry at University of Pittsburgh, joined GD/Convair in 1956. He has been APT's representative from the digital computer lab since 1958.

While APT is still in experimental stage, numerically-controlled machines have had a long and successful history with General Dynamics. GD/Convair was first in the United States to turn out a production part using "brain tapes."

APT, along with numerical-control, has been used to varying degrees in F-106, 880 and 990 programs and will be introduced on an expanded scale into manufacturing capability at GD/Fort Worth within six months.

Other General Dynamics men who have played key roles in development of APT include:

R. K. May, chief of applied manufacturing research at GD/Fort Worth, chairman of AIA's aerospace manufacturing committee.

Edwin Campbell, research engineer, GD/Convair, former GD/Astronautics representative to APT.

The task of continued expansion and further standardization of technique will be turned over to Armour Research, Illinois Institute of Technology, in December.

★ ★ ★

'APT' Used in Automatic Outlining, Pioneer Effort at San Diego

An airfoil contour was outlined automatically for the first time this month at General Dynamics/Convair using a programming method developed through close cooperation of three company functions.

From original data supplied by engineering loft, digital computer programmers evolved a system of mathematically defining a curved line through points, using the industry-wide APT (Automatically Programmed Tool) system. Applied manufacturing research department coordinated interdepartmental activities.

Until this time, no computing program had been developed which could be used for linking basic element line intersections (or grid points) to form any but conical shapes.

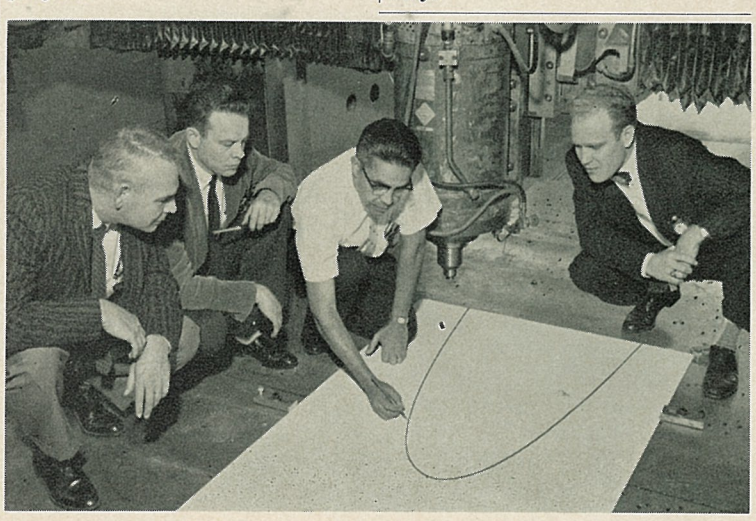
According to E. L. Moore of engineering loft, who was closely connected with the program from its inception several months ago, the new method will allow either automatic scribing or milling of an airfoil section to a high degree of accuracy on any tape-controlled contouring machine. This is but one part of an overall numerical-control research and development program sponsored by the company over the last year.

The trial run saw a leading edge rib for the basic Convair 880 scribed automatically on a white-painted aluminum layout board by a tape-controlled Giddings and Lewis skin mill at Plant 2.

"The test proved that now it is possible to attain accurate external airfoil layouts quickly by the computer 'mill-scribe' program," Moore continued. "This will eliminate a great many manual calculations and manual drawings and could, eventually, cut lead time between design and production by as much as half."

W. J. Wood, as engineering loft group engineer, was directly responsible for that section's part in the cooperative effort.

Developing the analytical routines for loft work were R. I. Hagar, APT system representative for GD/Convair, and D. R. Eaton, programmer, both reporting to Dr. Leo Lapidus of the digital computing lab. S. C. Padilla of applied manufacturing research, which is directed by W. E. Wise as chief, coordinated the project.



TRIAL RUN—S. C. Padilla points to machine-scribed loft line for 880 part using computing system preparation program just developed at GD/Convair. Intently viewing results of months of study are, from left, E. L. Moore, R. I. Hagar, Padilla, D. R. Eaton.

Two More B-58s Join 305th Wing

A total of 14 B-58s now belong to the 305th Bomb Wing at Bunker Hill AFB following recent delivery of two Hustlers to the Indiana base.

Hustler No. 81 was delivered in a flight which lasted four hours. Crew consisted of Maj. H. E. Flook, pilot; Capt. L. Broome, navigator; and 1st Lt. C. R. Leonard, DSO.

In a 3-hour, 35-minute delivery flight a few days later, No. 77 was delivered to the Indiana base. Lt. Col. J. J. Trevisana was pilot; Capt. B. A. Silva Jr., navigator; and 1st Lt. J. S. Coryat, DSO.

Build-up of the second wing of B-58s at Bunker Hill continues, with delivery of three more production Hustlers—Nos. 78, 80 and 85—tentatively slated for late October.

According to a SAC release made earlier this year, the 305th will be fully equipped with a full complement of 40 B-58s by May, 1962.

B-58 ENGINE CHANGE BREAKS OLD RECORD

A Carswell AFB maintenance crew changed a B-58 engine in the record time of 3 hours, 30 minutes this month, besting the previous record by 1½ hours.

An engine change involves taking off the engine, performing necessary maintenance, installing the engine, and finally conducting engine runs and final inspection.

No. 3 engine on TB-58 No. 12 was changed Oct. 4 and the aircraft was flown that afternoon, without a single "squawk" on the engine.

Crew making the change was S/Sgt. Edwin A. Bruner, S/Sgt. Edward Euglow, A/1C David L. Lake, and A/1C Elbert H. Woodall.

Supervisors in the project included C/MSgt. John B. Shinn Jr., S/MSgt. Ronald E. Schoonover, and S/MSgt. Wesley E. Davis.

CAB, FAA Men Trained in 990

Two Civil Aeronautical Board officials, both from Washington, D.C., and three Federal Aviation Agency representatives ended a two-week training course on the Convair 990 at General Dynamics/Convair last Friday.

Special familiarization lectures were arranged by customer transport service instructors to meet specific needs of the two groups.

CAB men, J. H. Lewis and H. H. Black, as aircraft accident investigators, were concerned primarily with 990 escape systems and emergency equipment.

The three FAA men spent their time in a program on 990 engines and systems receiving power from the engine. They were: Lyle O. Combs, aircraft modification design engineer from Oklahoma City; E. B. Saul, air carrier maintenance, Los Angeles; and J. R. Ball, electronics engineer, also Oklahoma City.



DOLLAR SAVER—J. V. Dickson, left, GD/Astro, who submitted $1-million-plus Cost Improvement Proposal recently, shows M. F. McDonald, GD/Astro manager of organization and systems, Chamber of Commorce trophy awarded him.

All Records Smashed By Million Dollar CIP

A million-dollar Cost Improvement Proposal (CIP)—the largest since the CIP program's inception—has been approved for installation at General Dynamics/Astronautics.

James V. Dickson, depot and support contracts administrator (Dept. 110-0), submitted the idea which calls for consolidation of several operational spare parts contracts to support all related production contracts.

The single spares support contract innovation, expected to save $1,078,000 in its first year of use at GD/Astro, may also be applied as standard Air Force practice to future major weapon system programs.

Dickson's idea eliminates hundreds of pounds of paperwork previously required to document spares for several programs individually.

Several thousand documents, each requiring separate procurement and delivery action, will no longer be needed, and the total number of high value items required is reduced. Individual provisioning parts breakdowns (PPBs) formerly necessary to back spares items on each contract, are eliminated, with this item alone saving over $75,000 yearly in preparation and reproduction costs.

The CIP plan for salaried employees and the Employee Suggestion (ES) program for hourly employees are administered at GD/Astro by organization and systems (Dept. 170).

Hourly employees receive cash awards for accepted suggestions. In the case of CIPs, a record of acceptance is placed in the personnel file of the individual submitting them, and is considered in connection with periodic performance reviews.

In addition, CIPs such as Dickson's, which result in extraordinary savings, earn their originators nominations for the annual President's Award.

C. R. Smith to Speak To Science Academy

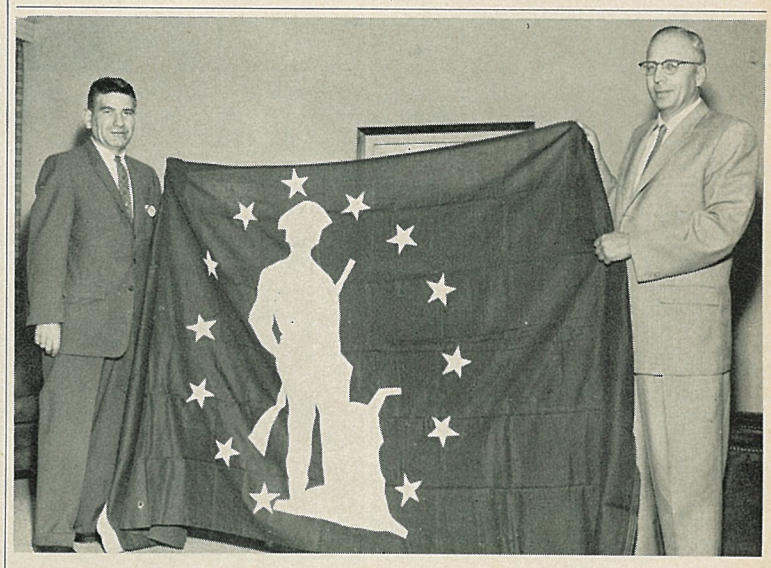
Clarence R. Smith, design specialist in General Dynamics/Convair fatigue laboratory, will be guest speaker before the National Academy of Sciences, Washington, D. C. on Nov. 7.



C. R. Smith

His paper is titled, "The Cause and prevention of Fatigue Failures in Metallic Structures."

Smith is nationally known for his work on fatigue of metal structures. Some of his innovations, such as edge-driven rivets and auxiliary thin doublers, are known to increase structural longevity by five to 100 times.



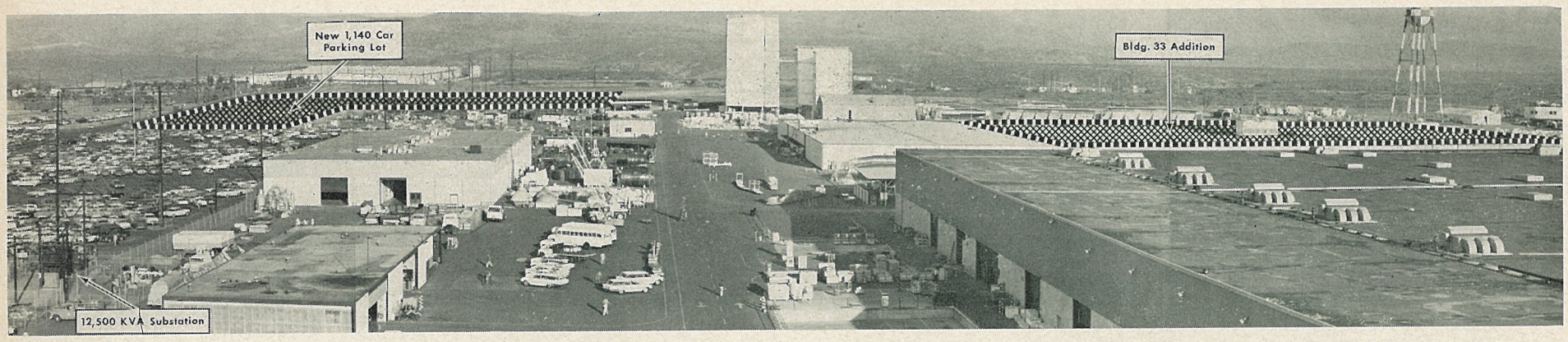
"OUTSTANDING"—In recognition of "outstanding record" in U. S. Savings Bonds buying by personnel of General Dynamics divisions, "Minute Man Award" was made this month at San Diego. Holding flag are R. H. Biron, right, senior vice president—industrial relations, and J. L. Budros, director of personnel administration.

General Dynamics Bond Buyers Earn Minute Man Flag Award

A "Minute Man Award" was presented at San Diego this month in recognition of "an outstanding record of participation in the payroll savings plan" for purchase of U.S. Savings Bonds.

Specifically, the award from Treasury Secretary C. Douglas Dillon, involved the records of General Dynamics/Pomona, General Dynamics/Convair, General Dynamics/Astronautics and General Dynamics/Fort Worth. It included permission to fly the "Minute Man" flag.

More than half of the employees in these divisions currently purchase bonds by regular payroll deduction. According to the latest figures available, $386,359 is deducted every week for this purpose, or more than $20 million each year!



SWEEPING VISTA—Four photographs, taken with telephoto lens from top of Bldg. 3 by GD/Astro photographer Henry Kierstead, show ever-changing scenes of east edge of Astronautics' main plant site. New paved parking area under construction appears upper left. Two other new parking areas are not shown.

GENERAL DYNAMICS

NEWS

ASTRONAUTICS EDITION

Vol. 14, No. 22 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | Wednesday, October 25, 1961

Paved Parking Areas Growing At Mesa Plant

New construction projects and relocation of several departments into newly acquired space will keynote closing months of 1961 at General Dynamics/Astronautics.

Major expansion of work space at the main plant will be noted with completion of the 171,000 sq. ft. addition to Bldg. 33, now slated for completion in early December. New paved parking areas for almost 2,000 cars are "in the works" and a new power substation was installed recently.

Also on the agenda is expansion of areas occupied by GD/Astronautics at Plant 2. By late this year GD/Astro employees will occupy all of Bldg. 3, all of Bldg. 4 exclusive of first aid stations, two-thirds of Bldg. 24, and one-third each of Bldgs. 2 and 28.

Leading the series of moves into Plant 2 was the Oct. 9 shift of about 170 base activation (Dept. 600) employees from Bldg. 26 at the main plant to new quarters on the Bldg. 2 mezzanine. Over the coming weekend (Oct. 27-28) an additional 150 base activation employees now in the Astro materials building will take up office areas on the first floor of Bldg. 2. And some 80 tooling people (Dept. 400) now in Bldg. 5 will be relocated in the same area.

Taking up space vacated in Bldg. 26 at the main plant was a group of about 30 members of contract (Dept. 110) department,

(Continued on Page 2)



DOLLARS!—Ernest Buck, left, and Larry Janson, Con-Trib-Club Committee members at GD/Astro, hold bundles of cash representing more than $253,000 given local charities in San Diego area last year by Con-Trib. In addition, more than $90,000 was given in communities where Atlas bases are operating. Annual Con-Trib-Club membership drive begins Nov. 9.

DOUBLE-BARRELED CON-TRIB EFFORT WILL BEGIN NOV. 9

A double-barreled campaign for increasing Con-Trib-Club giving will be waged Nov. 9-17 at General Dynamics/Astronautics with twin goals of raising participation over 92 per cent and boosting total dollar contributions from last year's $384,000.

This year's effort coincides with a community drive at San Diego to support United Fund, hard pressed to operate its 97 agencies. Astro's dollar contribution goal will be established just as soon as its "fair share" of the overall United Fund goal is determined.

J. R. Dempsey, Astronautics president, will chairman this year's drive.

"I have reviewed the critical situation facing our community in financing United Fund and other charitable agencies. Therefore, I personally want to do everything I can to make this year's Astronautics campaign a successful one," Dempsey said.

"Although our Con-Trib-Club support in the past has been commendable, we need now to be substantially more generous — for their need is great."

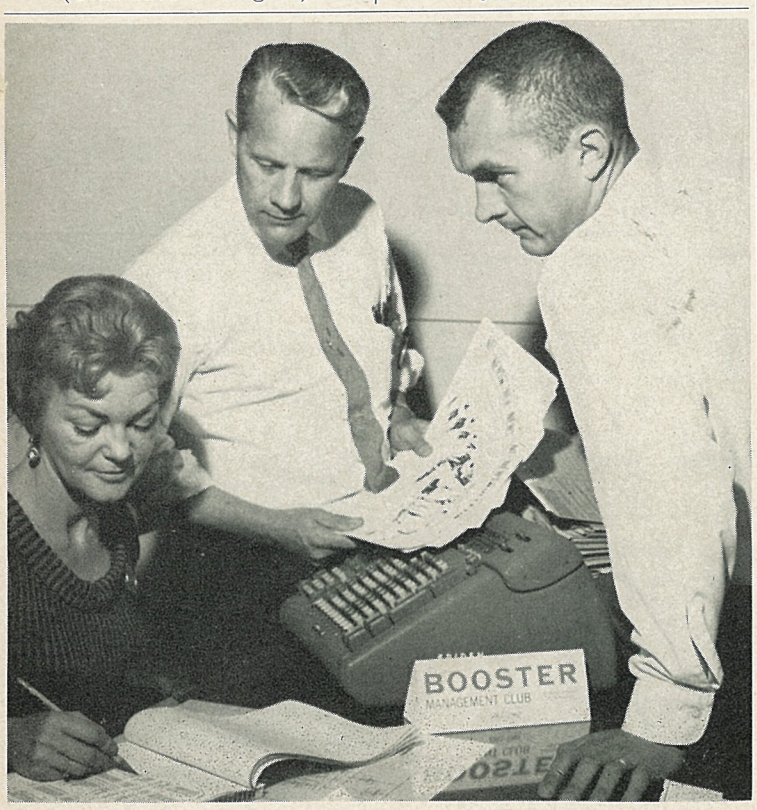
Tab cards are being prepared for all Astronautics employees. Nonmembers of Con-Trib may join by signing and authorizing payroll deductions of set amounts. To help each employee determine his "fair share," charts, based on income, will be printed on each card. Present members may wish to increase their present contributions.

In addition to the division-wide goal, dollar targets will be set for individual departments.

Last year Con-Trib-Club gave almost $230,000 to United Fund of San Diego County and $58,615 to similar combined community charity organizations in other sections of the country.

Beyond this, a total of $55,000 was contributed to other organ-

(Continued on Page 2)



SUMMING UP—Margaret Johnson helps R. T. Bauman and D. K. Slingsby with applications during GD/Astro Management Club membership drive now in progress. Men are co-chairmen of Booster committee heading effort.

Fairchild, Forbes Sites Activated; Astro Men Cited

Atlas launch and service facilities supported by two Air Force installations — Fairchild AFB, Wash., and Forbes AFB, Kan. — were declared operational this month by the Strategic Air Command.

Operational status came for the two bases within a two-week period with Fairchild AFB leading off Oct. 3 and Forbes AFB following Oct. 16.

General Dynamics/Astronautics had had large work forces on hand at each base for an extended period, completing final installation and checkout of launch and service facilities.

While the exact number and location of launch complexes at each of these sites remains classified information, it was revealed that the two Strategic Missile Squadrons (the 567th at Fairchild and the 548th at Forbes) manning these sites were the fourth and fifth units of their types now on duty as part of SAC's forces. Too, it was announced that both bases are equipped with the series "E" Atlas which employs launch complexes consisting of "semi-hard" sites in which the missile is stored in a horizonal position below ground.

Previously, Atlas launch facilities were declared operational at Vandenberg AFB, Calif., Warren AFB, Wyo., and Offutt AFB, Neb. Under construction are "silo" type launch facilities at six other bases.

Maj. Gen. Thomas P. Gerrity, commander of the Ballistic Systems Division of the Air Force System Command, executive management unit for the nation's ballistic missile force, singled out individuals including many GD/Astronautics employees, for their

(Continued on Page 2)

Forbes Activation A Speedy Sequence

Some indication of the speed in which Atlas launch facilities are being built, equipped and checked out is indicated in a Strategic Air Command news release distributed at the Forbes AFB turnover.

It revealed this sequence in the Forbes activation:

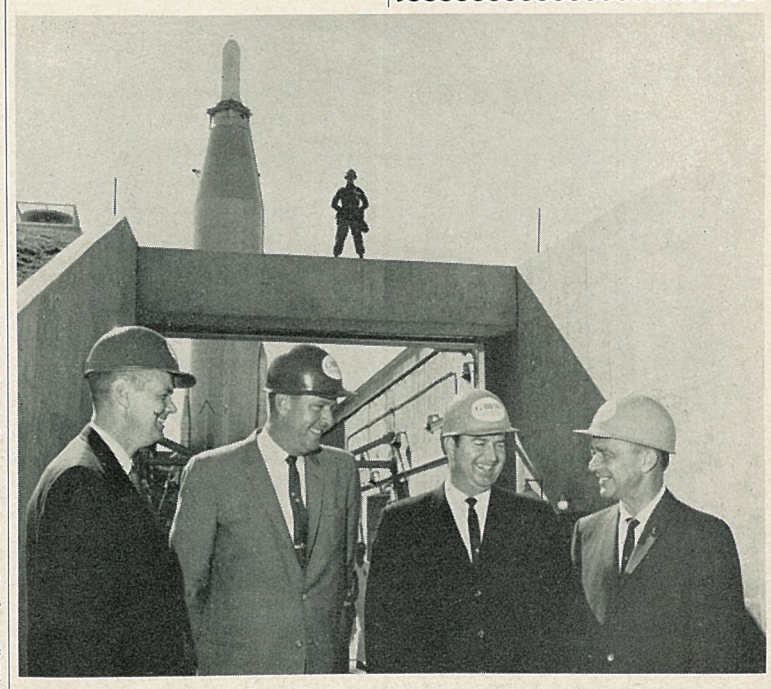
February, 1959: Forbes selected as Atlas ICBM base, 548th SMS selected to man Atlas facilities;

June 12, 1959: Ground breaking for first complex takes place;

Nov. 30, 1960: First launcher installed in site near Burlingame;

Jan. 24, 1961: First Atlas missile received at Forbes AFB;

Oct. 16, 1961: Strategic Air Command accepts all Atlas facilities, declares base operational.



AT TURNOVER—Astronautics executives taking part in Forbes AFB turnover of Atlas missile sites pose before raised missile. They are, from left, M. R. Ubben, Forbes operations manager; P. M. Prophett, director of base activation; E. J. Huntsman, base activation manager for "E" and "F" bases; and W. L. Van Horn, Atlas program director.

Log Book Entries



VETERANS—Three new 25-year men were pinned recently at GD/Astronautics. From left, they are: Donald F. Pearse, Dept. 220-4; W. T. Herchold, Dept. 731; K. G. Clarke, Dept. 290-2.

Promotions

MAIN PLANT

Promotions to or within supervision effective Oct. 9.

Dept. 101-7, Data Processing: To asst. research group engineer, T. R. Dines.

Dept. 130-5, Industrial Relations: To employee services supervisor, K. A. Sears.

Dept. 141, Quality Control: To process control supervisor, L. Dassoff. To asst. supervisor, process control, H. C. Cox.

Dept. 220-3, Manufacturing Control: To manufacturing control asst. foreman, O. E. Morgan.

Dept. 305-0, Support Administration: To support task control asst. supervisor, W. B. Ambrose.

Dept. 321-3, Personnel Systems Engineering: To training asst. supervisor, G. Anderson.

Dept. 322-7, Support Publications: To support publications asst. supervisor, E. J. Boltz, E. P. Duggan.

Dept. 337-1, Support Documentation: To parts documentation asst. supervisor, R. A. Milot, T. P. St. Germain.

Dept. 351, Field Modification: To field modification group engineer, P. J. Miller. To foreman, N. D. McMahon, C. C. Scott. To asst. foreman, J. F. Krakowski. To support logistics asst. supervisor, M. L. Sweeney.

Dept. 831-1, Material Control: To material control supervisor, C. T. Felz, D. J. Gallagher. To material control asst. supervisor, R. D. McNall.

Dept. 840-0, Material Cost and Administration: To chief of material cost and budget, W. H. Barnes.

Dept. 842-1, Material Estimating: To material cost supervisor, C. E. Stoll.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To task control supervisor-base, M. G. Holleb. To launch complex asst. supervisor, W. A. Martin Jr. To production control asst. foreman-base, M. L. Larsen. To asst. foreman, J. L. Fox.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To task control supervisor-base, A. H. Rambeau Jr. To inspection asst. supervisor, D. C. Johannesmeyer. To receiving and stores asst. foreman, C. B. Dempsey. To production control asst. foreman-base, N. E. Tamm. To asst. foreman, G. F. Stengel Jr., W. H. Weatherby.

EDWARDS RS

Dept. 575-1, GD/Astronautics Operations: To asst. test conductor, P. J. Grubl.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To sub-contract coordination supervisor-base, R. C. Hawkinson. To subcontract coordination asst. supervisor-base, D. E. Vendeville. To head nurse, D. K. Davis. To MAB asst. supervisor, G. F. MacLean.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To task control supervisor-base, L. L. Davis Jr. To material control supervisor, R. E. Horne. To inspection asst. supervisor, D. Johnson, C. P. Renaud. To asst. foreman, H. F. Liscom Sr.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To head nurse, I. R. Wolf. To inspection asst. supervisor, C. L. Majors. To asst. foreman, P. K. Noland, A. P. Salazar.

SYCAMORE

Dept. 573-3, GD/Astronautics Operations: To asst. foreman, V. J. Farrell.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To field test group engineer, H. R. Pearson. To site engineering services supervisor, M. R. Knuth. To site engineering supervisor, F. H. Burris. To receiving and stores asst. foreman, D. J. Lester.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To asst. foreman, L. W. Carr, L. B. Dixon, C. A. Goeb Jr.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To task control supervisor-base, T. S. Klanicza. To transportation asst. supervisor, G. R. Chambers. To launch complex asst. supervisor, J. D. Stiles.

Deaths

FORBES AFB

EVERETT—Edward H., Dept. 614. Died Oct. 2. Survived by mother, Mrs. Mary P. Everett, and brother, Ernest.

Service Emblems

MAIN PLANT

Twenty-five-year: Dept. 344-1, O. E. Mecham; Dept. 536-3, J. W. Hanna.

Twenty-year: Dept. 181-0, S. J. Earle; Dept. 771-0, W. H. Marshall.

Fifteen-year: Dept. 195-0, C. H. Meyer; Dept. 342-3, R. E. Torrence; Dept. 451-0, Melius Serniuk, R. A. Wiedenfeld.

Ten-year: Dept. 130-1, Julia S. Carlin; Dept. 141-5, R. E. Culver; Dept. 193, Ruth D. Kain, J. E. Neff, D. S. Vollmer; Dept. 220-2, Gerardo Zendejas; Dept. 250-2, P. L. Callahan; Dept. 322-4, J. H. Mitchell; Dept. 401-5, John Ferson.

Dept. 522-2, Edward Kulas; Dept. 535-7, T. H. Buckley; Dept. 539-2, H. R. Havlik; Dept. 541-3, P. V. Smith; Dept. 545-7, R. P. Mikkelson; Dept. 553-1, P. M. Giard Jr.; Dept. 578-3, R. L. Batten; Dept. 606-0, J. F. Skarda; Dept. 733-0, F. C. Wolfe; Dept. 756-0, Margaret R. Johnson; Dept. 758-0, Horace Jackson; Dept. 771-0, R. D. Hill; Dept. 782-0, W. L. Van Horn; Dept. 811-1, A. W. Clark; Dept. 813-2, F. S. Brown Jr.

ALTUS AFB

Twenty-year: Dept. 617-0, Delbert Meredith.

Ten-year: Dept. 617-8, K. G. Hicks.

DYESS AFB

Ten-year: Dept. 618-7, J. L. McGuffee.

FAIRCHILD AFB

Fifteen-year: Dept. 613-8, D. W. Beck.

FORBES AFB

Ten-year: Dept. 614-7, D. H. Stone.

SYCAMORE

Twenty-year: Dept. 573-3, J. G. Gray.
Ten-year: Dept. 573-3, Donald Downs, W. F. Mundell.

WALKER AFB

Ten-year: Dept. 619-7, R. G. Buttrill.

Births

MAIN PLANT

DETWILER—Daughter, Judy Louise, 8 lbs., 2½ oz., born Sept. 6 to Mr. and Mrs. Jack Detwiler, Dept. 578-1.

LANGE—Son, Joseph Jude Morgan, 7 lbs., 5 oz., born June 30 to Mr. and Mrs. R. O. Lange, Dept. 322-5.

LEPPER—Son, Daniel Darwyn, 8 lbs., 8 oz., born Oct. 5 to Mr. and Mrs. Darwyn R. Lepper, Dept. 759.

SMITH—Daughter, Lorraine Maurine, 7 lbs., 12 oz., born Sept. 23 to Mr. and Mrs. Mark W. Smith, Dept. 324-4.

SYCAMORE CANYON

ADORNO—Daughter, Lisa Marie, 6 lbs., 1 oz., born Oct. 14 to Mr. and Mrs. Frank Adorno Jr., Dept. 573-3.

DYESS AFB

HINTON—Son, Jimmy Houston II, 7 lbs., born Sept. 9 to Mr. and Mrs. Jimmy H. Hinton, Dept. 618.

ROBERTS—Son, Gary Eldon, 7 lbs., 4 oz., born Oct. 10 to Mr. and Mrs. Gerow Roberts, Dept. 618.

WARREN AFB

ARNOLD—Daughter, 8 lbs., 13½ oz., born Aug. 23 to Mr. and Mrs. Eugene Arnold, Dept. 611.

BROWN—Daughter, Patricia Ray, 8 lbs., 4 oz., born Aug. 18 to Mr. and Mrs. Gary Brown, Dept. 611-6.

DEES—Daughter, Jane, 7 lbs., born Oct. 4 to Mr. and Mrs. H. L. Dees, Dept. 611.

GANNON—Daughter, Margaret Lu-Ann, 7 lbs., 8 oz., born Sept. 26 to Mr. and Mrs. Philip Gannon, Dept. 611-5.

JENNINGS—Daughter, Pamela Carol, 7 lbs., 5 oz., born Sept. 8 to Mr. and Mrs. Donald L. Jennings, Dept. 611-0.

MAKUS—Son, Jonathan Jay, 6 lbs., 1 oz., born Aug. 17 to Mr. and Mrs. Jeff Makus, Dept. 611-6.

RICHARDSON—Son, Jackson Curtis, 7 lbs., 12 oz., born Aug. 18 to Mr. and Mrs. Vance Richardson, Dept. 611-6.

ROYBAL—Daughter, 7 lbs., 7½ oz., born Aug. 4 to Mr. and Mrs. Fred Roybal, Dept. 611.

Salvage Yard Sale Schedule Listed

Next four-week Saturday sales schedule at General Dynamics salvage yards at two San Diego divisions are:

GD/Convair — Oct. 28, Nov. 11.

GD/Astro — Nov. 4 and 18.

General Dynamics NEWS

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Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

Paved Parking Areas Growing At Mesa Plant

(Continued from Page 1)

who moved last week.

Completion of the Bldg. 33 extension will signal moves which will see almost 5,000 members of engineering (Dept. 500) shifting.

Work on this project has moved at a fast pace. Lighting, primary power supply and air conditioning equipment is now being installed. By early November elements of manufacturing control (Dept. 220-3) are expected to be relocated there.

Growth of the Kearny Mesa facility has led to replacement of the main 7,500 kilovolt-ampere (KVA) electrical substation near Gate 1 with a new 12,500 KVA unit. (By comparison, a 6,000 KVA unit carried the electrical load for Plant 2 during the peak of World War II operations!)

Paving projects under way at the main plant include both employee parking lots and new in-plant missile storage areas.

Completed recently was a hard-surfaced 100,000 sq. ft. triangular parking area for 322 cars adjacent to the southwest parking lot. Later this month, an area of approximately the same size and accommodating 430 cars will be paved east of the existing south parking lot.

Grading is now in progress for a 350,000 sq. ft. area north and east of the reclamation yard. This is to be paved, lighted and marked for 1,140 cars prior to occupancy of Bldg. 33 expansion in December.

Also scheduled for paving are in-plant missile storage areas east of Bldg. 5 and west of Bldg. 33.

CHERRY AND BARNES ASSIGNED NEW DUTY

New executive assignments at General Dynamics / Astronautics have been announced for R. L. Cherry and W. H. Barnes by S. A. Falk, manager of material cost department.

Cherry, formerly chief of material cost and budgets (Dept. 844), is now a project administrator in material cost department. He will perform special assignment duties involving material estimating, price analysis and cost and budgets section.

Falk indicated that Cherry will spend considerable time in developing improved fiscal administration of base activation, subcontracts, material commitment control and mechanical cost processing.

Barnes assumes Cherry's previous post as chief of material cost and budgets. His responsibilities include analysis and reporting of material office project budget status and forecasts. In addition, administration of subcontract termination and cost plus fixed fee (CPFF) subcontract close-out groups of Dept. 840 will be directed by Barnes.

MANAGEMENT CLUB IN MEMBERS DRIVE

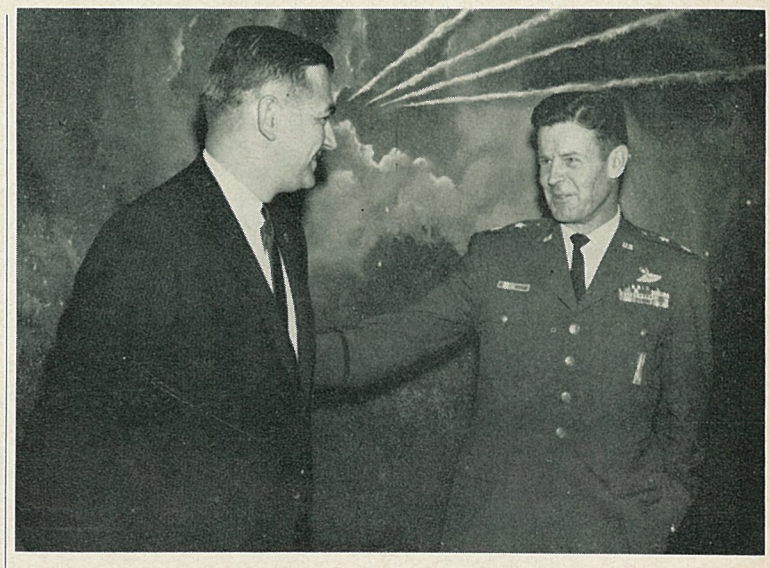
During the first weeks of a concerted membership drive now in progress, General Dynamics/Astronautics Management Club has contacted some 3,820 employees eligible to join the club.

R. T. Bauman and D. K. Slingsby are co-chairmen of the campaign which is coordinated through the club's "Booster" organization.

The effort is designed to introduce eligible nonmembers to advantages of club membership. Early results included more than 200 applicants, and telephone inquiries from others.

Next phase of the one-month drive is under way, with "Boosters" making personal contacts.

All non-represented salaried employees and supervision may join GD/Astro Management Club. Dues of $1.25 per month include initiation fee.



CITED—Maj. Gen. T. P. Gerrity, commander BSD, congratulates W. F. Chana, GD/Astro base manager at Fairchild, on Commanders Award, conferred Oct. 3.

Fairchild and Forbes Bases Activated, Astro Men Cited

(Continued from Page 1)

work in bringing the sites to operational status.

Awarded the Legion of Merit were Site Activation Task Force commanders at both bases, Col. Thomas S. Jeffrey Jr., at Fairchild AFB, and Col. William E. Ruark at Forbes AFB.

Special "Commanders' Awards" were presented to W. F. Chana, GD/Astro operations manager at Fairchild AFB, and M. R. Ubben, GD/Astro operations manager at Forbes AFB.

Special praise was paid by General Gerrity to all GD/Astronautics employees as well as those of associate contractors involved for their work on what he termed "significant accomplishments in the greatest construction and engineering task in the history of the nation."

During a speech at Forbes AFB General Gerrity pointed out that work there was completed three weeks before schedule and without manhour losses due to labor-management problems during installation and checkout, accomplished by GD/Astronautics.

GD/Astro personnel taking part in both turnover ceremonies included P. M. Prophett, director of base activation, and E. J. Huntsman, manager of "E" and "F" series base activation.

Mortimer Rosenbaum, GD/Astro's executive vice president, was on hand at Fairchild AFB ceremonies, while W. L. Van Horn, Atlas program director, participated at Forbes AFB.

In the Fairchild turnover, General Gerrity passed on the operational sites to Brig. Gen. H. W. Ohlke, commander of SAC's 18th Air Division; Col. L. F. Miller, commander of the 92nd Bombardment Wing, and Col. Leonard L. Jella, commander of the 567th Strategic Missile Squadron.

At Forbes AFB the turnover passed from General Gerrity to Lt. Gen. John D. Ryan, commander of SAC's 2nd Air Force, to Brig. Gen. Richard O. Hunsiker, commander of the 21st Air Division, and then to Col. Gerald M. Clugston, commander of the 548th Strategic Missile Squadron.

All-Out Con-Trib Drive Scheduled

(Continued from Page 1)

ized charities. This was approximately $13 per capita, scarcely $1 a month.

"When you consider that our Con-Trib-Club is designed to concentrate our individual charity obligations in one gift, this is not a large sum," Dempsey said.

Although the total allocation to United Fund last year from Astro employees appears formidable, it falls considerably short of the individual giving reported from other, though smaller, concerns. One registered $25 per capita for United Fund alone.

Mixed Choral Group Opens New Season

Astro Notes, ARA mixed choral group, has opened a new season of activity and now meets and rehearses promptly at 7:30 p.m. every Monday in ARA Clubhouse.

C. P. Rolla, ARA commissioner, has announced that bass, tenor, soprano and alto voices are needed to fill out the group this year.

GD/Astro employees or members of their families have been invited to join Astro Notes which each year presents a series of choral concerts.

Students Earn Scholarships

Thirty-one San Diego State College students have been awarded scholarships for the current semester by General Dynamics/Convair and General Dynamics/Astronautics.

Scholarships are $75 each. They are awarded on basis of aptitude, scholarship, and likelihood of success in a chosen field. They are renewable each semester of the undergraduate program if scholarship standards are maintained.

The program is administered by educational services at each division.

Scholarships went to:

General Dynamics/Convair—Larry E. Bennett, chemistry; Howard J. Bryant, physics; Carolyn S. Calhoon, mathematics; Martin D. Eichman, accounting; Dale E. Eyman, business management; Richard Ferrara, physics; Roland H. Fisher, mathematics; Eric J. Flourie, chemistry; Robert Allan Hartmann, physics; Robert H. Leatherwood, engineering; Allan D. Lemaire, civil engineering; James K. Lisec, personnel management; Arnold C. Nilson, physical science; Jon A. Orvick, chemistry; Louis L. Pechi, engineering; Michael F. Richardson, business management; Michael H. Spritzer, engineering; Rory J. Thompson, mathematics; Bruce H. Weber, chemistry.

General Dynamics/Astronautics—Neville G. Alexander, accounting; Fred O. Andrews Jr., accounting; Robert Becker, chemistry; Jean G. Collier, personnel management; Douglas F. Davis, physics; John J. Emrich, chemistry; William A. Hines, physics; William Y. C. Howe, engineering; Stephen L. Pentoney, industrial management; Robert R. Smith, mathematics; John K. Ware, mathematics; Richard S. Wayne, chemistry.

AUGIE HILL HEADS NEW TEST DEPT.

A. E. Hill, veteran General Dynamics executive, has been named superintendent of a newly-created test equipment department (Dept. 783) at Astronautics by E. D. Bryant, vice president-operations.



A. E. Hill

Hill and his new department will report to Frank B. Kemper, factory manager, electronics manufacturing.

Hill joined Astronautics in March, 1960, as night manager. He first came to Convair in 1940 and except for a period away held various executive positions, including that of chief tool engineer and works manager.



"WINTER EXPRESS"—Dubbed "Winter Wonderland Express" by ground crews during FAA slush tests at Atlantic City experimental center, Convair 880-M plows through tons of man-made "winter" on runway to prove safe landing and takeoff conditions.

Service Rep Beginning Fifth Year Counseling Navy on R4Y Craft

One lone field service representative, supporting Convair-built planes, has been bypassed by the jet age.

Don Weaver, based at Naval Air Station, Patuxent River, Md., is the only GD/Convair customer service man still in the field with twin-engine transports and the only GD/Convair man still assigned to the Navy.

He is going into his fifth year with the Fleet Tactical Support Squadron One (VR-1) which flies R4Ys, Navy cargo transports. And there's every indication that the Navy has found Weaver's service so valuable that they will extend his duty another term, said L. J. Bordelon, chief of transport service.

In fact, he recently received a letter of commendation from Capt. G. F. Rice, commanding officer of Anacostia Naval Air Station, as well as expressions of appreciation from Capt. Edwin L. Kiem, commanding officer of VR-1.

Within the last two years all GD/Convair field service reps, except Weaver, have been withdrawn from naval bases. Last to come home were Bill Lewis from North Island NAS, Calif., and Bill Anthony from Pensacola, Fla. (Bill Copeland was last rep in the field with Convair-Liners. He returned this spring from General Motors headquarters, Detroit, Mich.)

At the height of the R4Y program in 1956, Convair reps were stationed at Norfolk, Va., Glenview (near Chicago, Ill.), Patuxent River, Pensacola, and North Island.

R4Ys went to VR-1 in 1955 and soon became the work horse of the squadron. It was the first squadron incorporated in the Naval Air Transport Service in early World War II days and is presently responsible for non-scheduled passenger and cargo airlift in direct response to Commander-in-Chief, U.S. Atlantic Fleet.

Operations of VR-1 hinge on the principle of "immediate service, anywhere," writes Weaver.

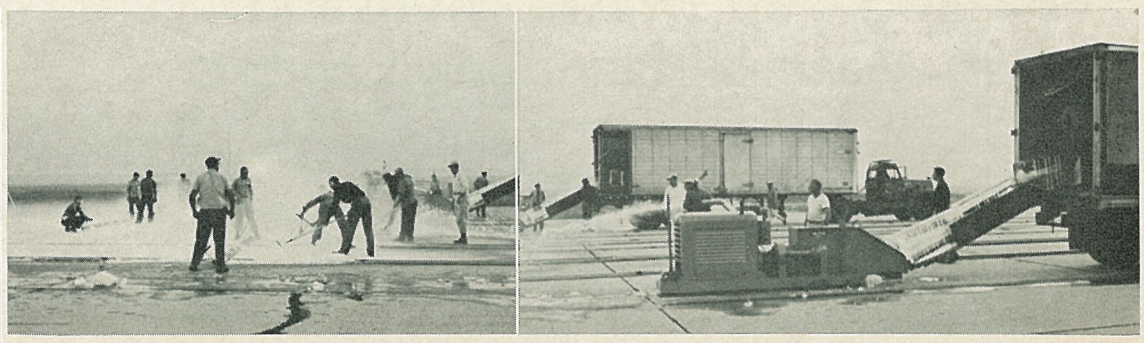
The eight, and sometimes as many as 15, R4Ys assigned to the squadron range to all parts of the country from Patuxent River. Most of the flying is along the East Coast with frequent routes to Newfoundland, Bermuda, Cuba, Puerto Rico. One R4Y is deployed now to South America to provide logistical support for a joint United States-South American naval exercise.

In the five years R4Ys have been based with the VR-1, they have helped amass over 126,000 flying hours and 26.7 million nautical miles. Each plane carries anywhere from 90,000 to 270,000 pounds of cargo and up to 3,000 passengers a month.

The squadron won the Airlant Safety Award for outstanding safety record in dual-piloted aircraft for 1960 and the Chief of Naval Operations' Safety Award for the four years prior to that.



AMONG FRIENDS—R4Y forms bulky background for friendly group of VR-1 associates at Patuxent River NAS, Md. From left are Lt. William Harper, quality control officer; Cdr. Myron Marlay, maintenance officer; Don Weaver, GD/Convair rep; Capt. E. L. Kiem, commanding officer; Lcdr. Sam Hopkins, assistant maintenance officer.



ICE FROSTING—Crews got up early (4:30 a.m.) to lay down crushed ice layers for Federal Aviation Agency's 880-M in recent bad weather testing. Ice arrived by van in night; went down chutes into snow-making machines (at right); was shot through nozzles onto runway; leveled and spread by 115-man crew divided into teams.

880-M Plows Into Man-Made Slush To Plot FAA Safety Regulations

A Convair 880-M plowed through tons of slushy ice out of season early this month, helping Federal Aviation Agency lay down winter safety regulations for jet transports.

And the corresponding tons of data collected at the National Aviation Facilities Experimental Center at Atlantic City, N. J., is being analyzed for such questions as: when is it safe for commercial airliners to land and take off in slush or standing water?

Glen Arner, General Dynamics/Convair field service representative on the site during runs which stretched over a couple of weeks in late September and early October, reported that the 880-M came through in good condition. The craft itself belongs to FAA. It was flown from San Diego in mid-September to FAA headquarters, Oklahoma City, Okla.

It took lots of ice, a couple of thousand tons, to lay down the man-made slush on a section of NAFEC runway for the 20 controlled tests. Because of the detailed nature and vast amount of information needed, takeoffs and landings could not be done in actual winter conditions with both plane and instruments at the mercy of capricious weather.

Even the time of day mattered. Quiet of early mornings, when the wind was low and the sun wasn't high enough to start melting ice, found the huge plane skidding to braked stops in cascading sprays of flying slush.

Runs were made at three different speeds—from about 135 to 185 miles an hour—in three different slush depths — one-half, one, and one-and-one-half inches.

It took 288 tons of ice to cover the 1,000-ft. long and 50-ft wide runway area (called "the pit") with an inch-and-a-half layer.

A fleet of vans hauled 300-lb. cakes of ice on location in the night. Ice slid down shoots into eight snow-making machines which can turn out 50 tons an hour. (The machines are commonly used in Texas farming areas for vegetable freezing.) Thoroughly crushed, ice was shot through nozzles, leveled, and raked. A crew of 115 men handled ice-laying operations in teams.

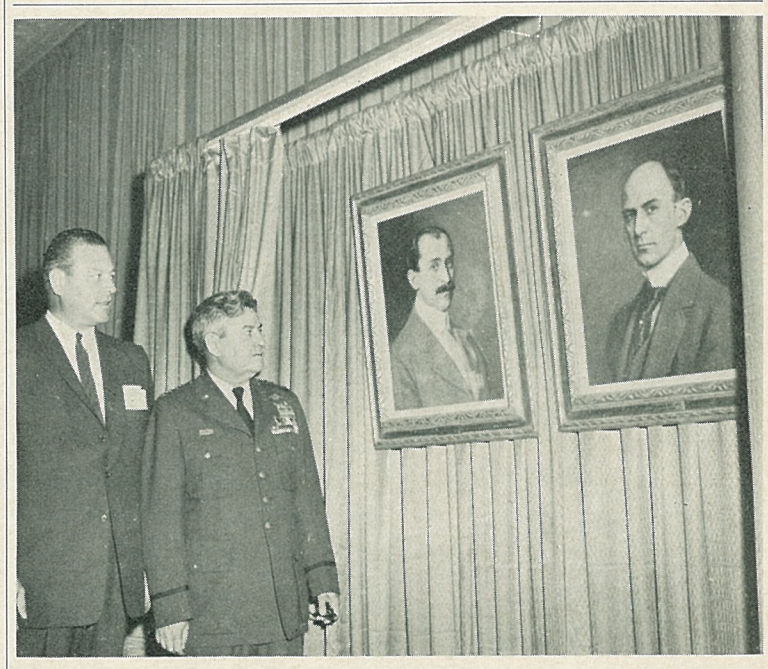
Entire program was jointly sponsored by FAA Aviation Research and Development Service, Flight Standards Service, and National Aeronautics and Space Administration.

Piloting the plane were Dick Richards, chief test pilot on the project and FAA engineering test pilot from Los Angeles, and Charles F. Stacy, chief 880 pilot for FAA from its air carrier operations division at Oklahoma City.

Results of data accumulated by cameras and test instruments within the 880-M will be compiled and studied as part of FAA's continuous flight safety testing program aimed at preventing jet transport accidents.

TEMPLE ATTENDS SAFETY CONGRESS

Fred Temple, General Dynamics/Fort Worth chief safety engineer, attended the National Safety Congress and American Society of Safety Engineers conventions held concurrently in Chicago Oct. 16-20.



FOR AF ACADEMY—On behalf of General Dynamics, C. Rhoades MacBride, executive vice president, left, recently presented two original oil paintings of Wright Brothers for hanging in Air Force Academy, Colorado Springs. Presentation was made at Air Force Association convention in Philadelphia to Gen. Curtis LeMay.



AT THE FAIR—Over 1,000 General Dynamics people from San Diego-located divisions viewed latest equipment and methods now on market for careful handling of materials at one-day Electronics Handling Fair, sponsored by General Dynamics/Electronics.

Electronics Fair Draws Thousand To See Material Handling Exhibits

Modern equipment for protection of electronic parts was on display this month (Oct. 12) at San Diego at a one-day Electronics Handling Fair, first of its type sponsored by Military Products Division of General Dynamics/Electronics.

Over a thousand General Dynamics people from three San Diego divisions, whose interests are concerned mainly with proper handling of materials, filed through the display area on Bldg. 4 mezzanine, GD/Convair Plant 1, to see exhibits of ten vendor representatives. All companies showing products were selected by GD/Electronics production engineering as most representative of latest-type handling equipment for specific purposes.

"We wanted as many as possible to have a chance to see new kinds of materials and methods available for protecting products," said J. P. Morris, manager of GD/Electronics production engineering, sponsoring group.

The fair was opened to all operations, engineering, quality control people from GD/Convair, Astronautics, Electronics — both Military Products and Information Technology Divisions.

"This is but one phase of our ever-continuing campaign to improve our material handling methods," pointed out H. L. Gates, operations manager of GD/Electronics.

"We build high-quality products, and we want to keep them that way. If we don't take pains to preserve them in storage and during transit, we lose all we've gained. And, as our products become more and more refined, thereby requiring a higher degree of reliability and quality control, careful handling becomes increasingly important."

Items such as disposable plastic gloves and aprons which tear off huge rolls; plastic "tote" boxes—containers of all sizes and shapes — bags, envelopes; file cases with separately lined compartments; "clean" room equipment; soldering equipment for encapsulation were prominent among displays.

Represented at the Fair were: C. S. Goodale Co., Winn Supply Co., both of San Diego; Storage Rack Co., Los Angeles; Specialty Converting, Inc., El Monte; Dolliver & Co., Los Angeles; Claude Michael, Inc., Glendale; Electronic Engineering Co. of California, Santa Ana; Agnew-Higgins Co., Stanton, Calif.; Cashin-Tipton & Associates, San Diego; Spaulding Fibre Co., Inc., Tonawanda, N.Y.

A. L. Weinstein of GD/Electronics production engineering made arrangements for the exhibits as Fair coordinator.

Delta Will Start 880 Service From San Diego East Next Week

Convair 880 passenger service will connect San Diego to southeastern points this weekend when Delta Air Lines begins flying a Convair jet airliner over a new schedule Oct. 29.

The 880 schedule will provide San Diego with service to Dallas, Fort Worth, Texas, and Orlando, Fla. Connections at Dallas and Fort Worth will be available for New Orleans, Atlanta, and Birmingham-bound passengers.

Eastbound, the 880 leaves daily at 10:10 a.m., stops in Los Angeles, then flies nonstop to Dallas, arriving at 4:20 CST, and reaches Orlando at 7:52 p.m. EST. Westbound, the flight leaves New Orleans at 7:10 a.m. CST, Fort Worth at 8:50 a.m. CST, and reaches San Diego at 9:40 a.m. PST.

Delta Air Lines was the first carrier to place Convair 880s in passenger service on May 15, 1960. It now has 12 Convair 880s operating over its network and another four on order for 1962 delivery.

QUALITY CONTROL TALKS SCHEDULED

Three General Dynamics quality control experts will take part in the 11th national conference, Aircraft and Missile Division, American Society for Quality Control in Los Angeles, Nov. 9-10.

J. Y. McClure, General Dynamics director of reliability and quality control, will speak on "Quality Control from the Management Viewpoint," at the Nov. 9 production quality control session.

David Archibald, GD/Astronautics manager of quality control, will moderate the design reliability session the same day. P. I. Harr, reliability control director at GD/Astro, will talk on "Test Control" at the Friday field service maintainability session.

15,000 See Spacecraft That Circled Earth

Over 15,000 visitors, plus as many or more employees, viewed a special display of a Mercury spacecraft this month at General Dynamics/Astronautics in San Diego.

The spacecraft is a "veteran" of two launchings by Atlas. On April 25 it was recovered after a successful separation from a missile destroyed 40 seconds after lift-off due to a programmer failure. On Sept. 13 Atlas 88-D, launched by an Astronautics crew at Cape Canaveral, sent the spacecraft on a 109-minute flight around the earth. It was recovered from the Atlantic.

Astronautics installed the spacecraft in Bldg. 2 lobby (after a bit of doing which included removing and replacing two glass panes and a steel beam) and invited the public to view it after normal work hours.

Wesley Brenton of NASA presided during public displays and helped play a special continuous tape recording of countdown talk during launch of the missile. The entire tape was narrated, save for actual crew voices, by Bill McGaw of Astro's motion picture and television section.

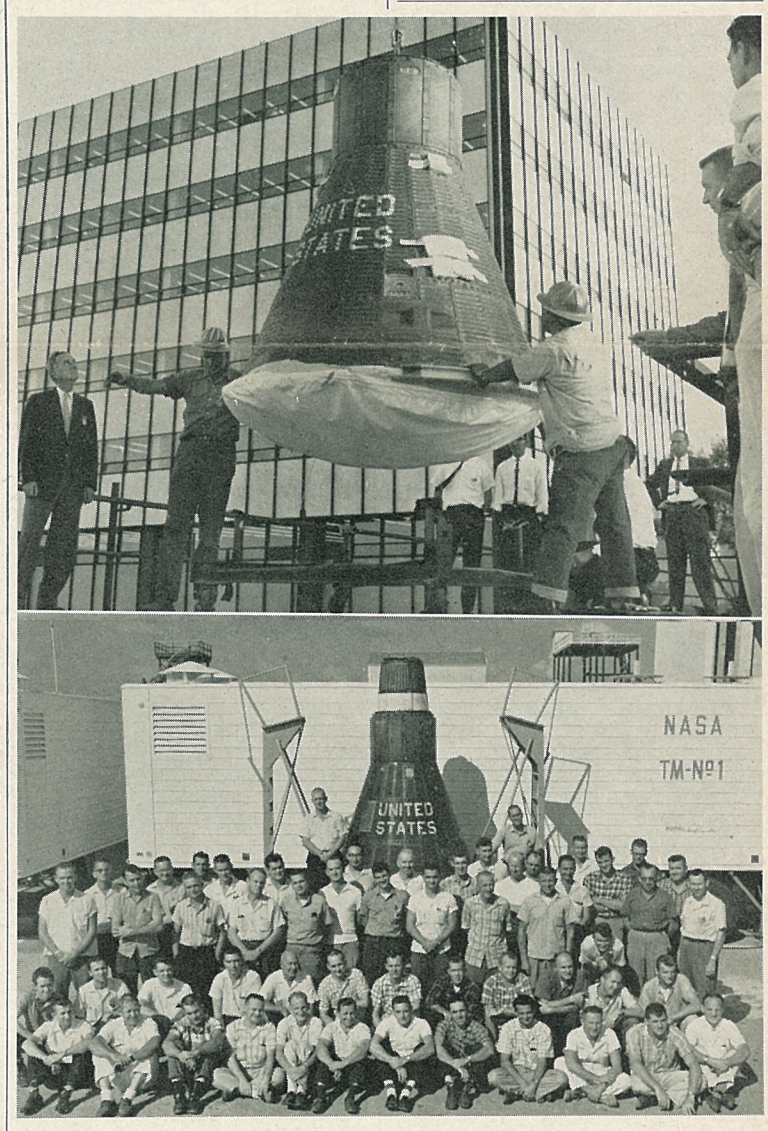
One unusual portion of the display, never seen by the public before, involved color weather reconnaissance shots taken from the capsule 100 miles above the earth. Prints, made by Astro's still photographic laboratory, showed the "eye" of Hurricane Esther over the Atlantic, the Sahara Desert, Indian Ocean with monsoon clouds and the west coast of Africa.

Also on display was a scale model of the Project Mercury Control Center at Cape Canaveral, designed and built by General Dynamics/Electronics, including an eight by 26-foot wall map and 12 display-consoles.

Security Society Headed by Higgins

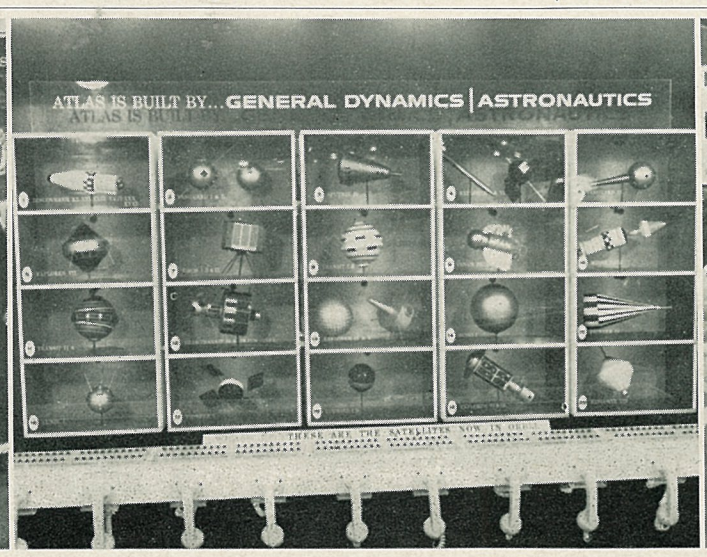
George D. Higgins, General Dynamics director of industrial security, this month was elected president of the American Society for Industrial Security during the annual national seminar in Detroit.

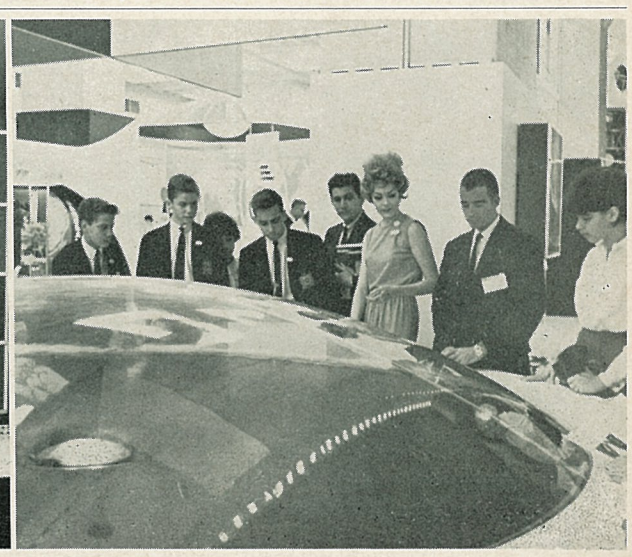
Higgins, who has held posts of secretary and treasurer in past years, was a member of the society's founding committee in 1955. Eric Barr, manager of industrial security for Electric Boat Division, is a former president and past chairman of the board. The organization lists 2,500 members in 58 chapters across the country, with representatives in all major industries.



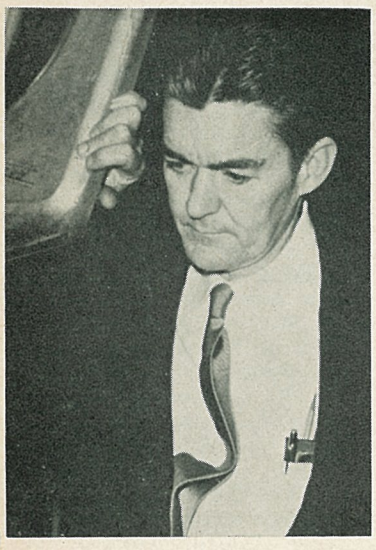
CIRCLER—Atlas-Mercury Spacecraft that circled earth Sept. 13 was displayed at GD/Astro plant in San Diego this month. In top photo, it is lowered onto dolly. Below, GD/Astro crew at Complex 14, Cape Canaveral, pose after it was retrieved from Atlantic.







IMPRESSIVE—GD/Astro exhibits at American Rocket Society convention in New York City "wowed" thousands and were often surrounded by several rows of curious. At left, visitors try out "robot psychologists" while in center are models of U. S. satellites now in orbit. (Recorded facts on each could be learned by picking up a telephone!) At right is view of space "pin-ball" machine, one of most popular displays.



LOSS — Frank Sinclair, longtimes sales executive at San Diego, died suddenly Oct. 12.

FRANK D. SINCLAIR, PILOT AND SALES EXECUTIVE, DIES

Frank D. Sinclair, assistant manager of commercial sales for General Dynamics at San Diego, veteran Air Corps and civilian pilot and widely traveled sales executive, died suddenly Oct. 12 at San Diego.

He leaves his wife, Laura Jane, two daughters, Candace and Victoria, and a son, Frank D. Jr.

Sinclair joined Convair in 1947, bringing with him a broad background of aviation experience and a colorful career as an aviator. He was born in Wilkinsburg, Pa., educated at University of Detroit, and graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, in 1932. He served two years as a second lieutenant, duty including the Canal Zone. He left the service to become chief flight instructor for the Colombian government.

Returning to the States in 1935 he joined Seversky Aircraft as chief pilot, selling and demonstrating new aircraft. Later, with Douglas Aircraft (1940-45) he was loaned for a year to the Government of China (1942) to advise Dr. T. V. Soong, then foreign minister, on equipment for the Chinese Air Force. During that tour he made two trips to China and among other tasks surveyed transportation routes over the "Hump" and made recommendations for increased payloads.

Following a year with TWA Sinclair joined Convair as a sales representative and was intimately associated with sales efforts on Model 240, 340 and 440 programs, both at home and abroad.

B-58 No. 3 'Retired' To Chanute Duty

B-58 No. 3, which made its maiden flight May 6, 1957, has retired to Chanute AFB, where it will be used for maintenance training purposes.

The third test Hustler to be flown, No. 3 was used primarily for stability and control testing. It was also used for testing of components in the bomb-nav system and autopilot before being put in service at Edwards AFB in September, 1959.

At Edwards, No. 3 was used in production boom data tests and non-frangible wheel tests.



Venus Flight To Use Atlas

Plans for utilizing an Atlas-Agena B launch vehicle for sending a Mariner spacecraft on a flight to the vicinity of Venus have been announced by National Aeronautics and Space Administration (NASA).

Slated for "mid-1962" the launch will occur when the earth and Venus are in the most favorable positions. This flight will provide an early test of basic equipment which will be used in later interplanetary flights.

Earlier, an Atlas-Centaur launch vehicle had been scheduled for this space probe. However, NASA indicated a change was being made in the interest of increased reliability to be expected from the greater number of Atlas-Agena B rockets which will have been fired before the Venus flight.

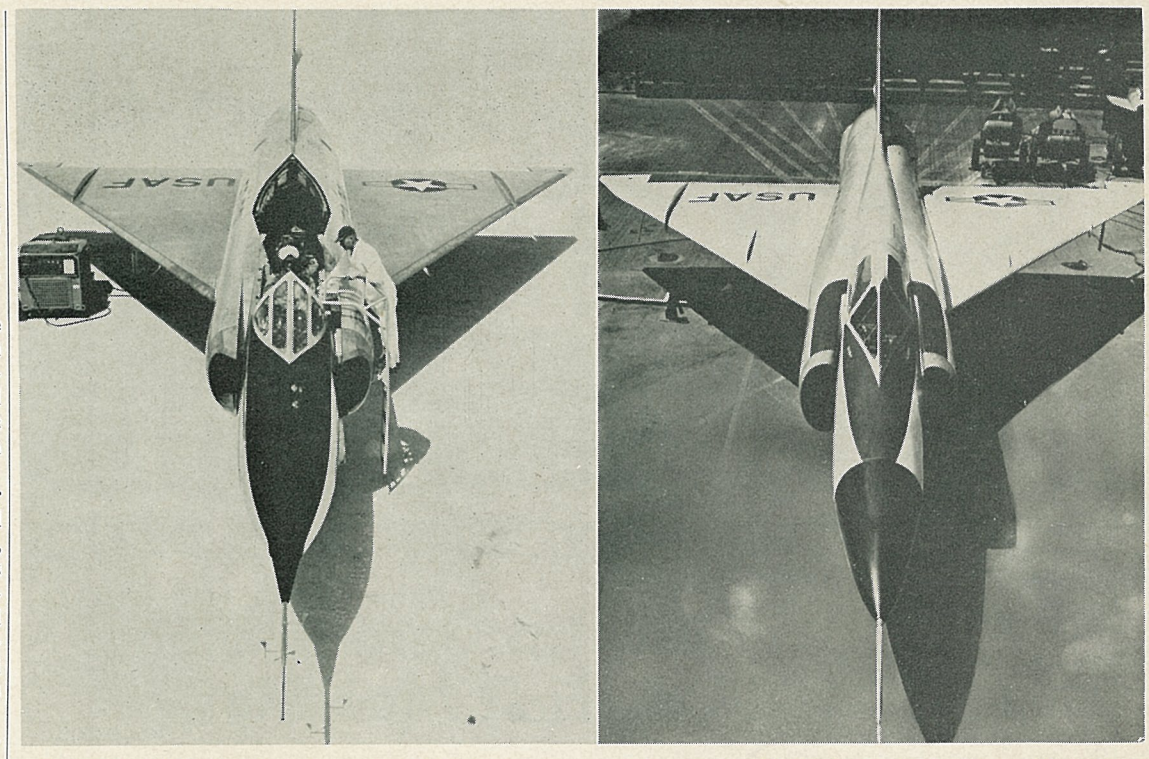
General Dynamics / Astronautics manufactures the Atlas launch vehicle for NASA and also builds Centaur.

Weighing about 400 pounds, the Mariner spacecraft may carry such equipment as that for investigating magnetic fields in space through a fluxgate magnetometer; for conducting radiation experiments to detect and count energetic particles from the sun and from outside the solar system; or a micrometeoroid detector and a radiometer to scan the surface of Venus for temperature distribution.

GD/Astro Man Cited For Honors Course

Dale G. Walton, major, USAR, of General Dynamics/Astronautics has been cited by R/Adm. R. E. Rose, USN, commandant of the Industrial College of the Armed Forces for completing that institution's correspondence course with honors.

The course, "The Economics of National Security," is based on a curriculum offered for active regular and reserve officers, government officials and selected civilians.



SPEEDY SHAPE—Prototype YF-102, left above, fell short of Mach 1, but when pinch-waist "figure" was adopted (right above) plane smoothly passed sound barrier on second flight.

Principle of 'Marilyn Monroe' Figure Applied to F-102, Put it Past Mach 1

(No. 70 in a continuing history of General Dynamics products deals with speed problem that led to "Marilyn Monroe" shape for YF-102 delta.)

Hasty post-war demobilization (1946-47) left the country almost undefended from air attack. There were only a few obsolescent coastal radar installations, one squadron of P-47 day fighters, one of P-61 night fighters.

Events abroad beginning in late 1947 (especially the appearance of the Russian TU-4 bomber) showed the need for a defense able to meet intercontinental attack by high-performance aircraft. An interim system was organized around the F-89C and F-94B all-weather interceptors and the "Lash-up" radar network. To develop a better defense by the target year 1954, the aircraft and electronic industries were asked to participate in a conference at Air Force headquarters in May, 1949.

Here a new approach generated by Gens. Muir S. Fairchild and Gordon P. Saville was introduced. Instead of issuing rigid specifications defining the equipment wanted, the Air Force stated its problem and asked industry to submit ideas leading to an integrated "weapons system." It was agreed that development of the electronics for a new interceptor would take longest and should start first. A competition led to selection of a Hughes Aircraft Co. design in May, 1950. The airframe competition followed at once. In June, 1951, Convair, Lockheed, and Republic were chosen to proceed with preliminary development. In September the Convair delta design was picked for the job and designated F-102.

The system originally was to consist of an airframe powered with the projected Wright J-67 engine (expected to pack a thrust of some 15,000 pounds) and the Hughes MA-1 fire-control equipment, so sophisticated it could take over most pilot functions, the Hughes Falcon (GAR-1) homing missile, and a second battery of folding-fin rockets. It soon was seen that not all the advanced features could be developed in time, and a lesser interim program was substituted. This included the F-102A plane, powered with the smaller Pratt & Whitney J-57 engine, and the Hughes MG-3 system, a partial development of the MA-1. The MG-3 could locate the target at long range, direct the pilot on the correct lead-collision course, and at the proper moment prepare and fire missiles or rockets automatically.

Outwardly, the F-102A looked like a big brother of the XF-92A, except for a slim nose and lateral air intakes flanking the cockpit. It was far different structurally — a strong skeleton of milled aluminum spars and longerons, covered with aluminum skins. The plane was designed to carry its full load internally: fuel in the wing spaces, more than three-quarters of a ton of electronic gear in the fuselage, and the Falcon missile in concealed ventral bays. Rockets were fitted into channels contained in fast-acting missile bay doors.

Engineering on a preliminary order for the ten YF-102s began in April, 1952, and the first plane was completed Oct. 15, 1953, making its maiden flight Oct. 24 at Edwards AFB, Calif. Engineers already were redesigning the fuselage, however. It had been discovered with dismay, earlier in the year, that the YF-102 would not be able to push past the sound barrier. This was demonstrated by a test program with wind tunnel and rocket-powered models. In hopes of saving the plane, Convair and Air Force engineers decided to apply "area rule," a principle discovered in 1952 by Richard T. Whitcomb, NACA aerodynamicist.

Whitcomb's studies indicated that in slender, short-winged aircraft the drag rise near Mach 1 depends primarily on the distribution of cross-sectional areas as measured along the plane's axis from nose to tail. Where the rate of change in area is rapid, stronger shock waves (and increased drag) result. Whitcomb found he could greatly reduce transonic drag by indenting the plane's body where the wings were largest. This prevented rapid change in the total cross-sectional area.

The third YF-102 on the line was modified according to these principles. Its waist was pinched along the wing and its nose was slimmed and lengthened. Additionally, the plane was lightened by whittling away some of its excess structures (no longer needed, due to substitution of the light J-57 engine for the J-67 originally planned). The modified plane, redesignated the YF-102A, had a shakedown flight Dec. 20, 1954, and the following day easily exceeded Mach 1 in level flight.



AA "STUDENTS"—First American Airlines group completing airlines' own 990 orientation course held at GD/Convair plant were (from left) H. L. Patterson, Tulsa, Okla.; D. Breeding, Washington, D.C.; C. Raffey, Boston, Mass.; L. Ekberg, Cincinnati, Ohio; H. Goers, St. Louis, Mo.; B. Naylor, Newark, N.J.; J. D'Angeli, Tulsa; H. Brockel, La Guardia Field, N.Y.; G. Crozier, Idlewild, N.Y.; O. Gilbert, La Guardia.

American Airlines 'Graduates' Key Personnel in 990 Course

Second in a series of American Airlines "seminars," taught by their own instructors at General Dynamics/Convair, will end today (Oct. 25).

Before the end of December, five groups of key personnel from all points of the American Airlines system will be at the San Diego plant for "graduate" work on the Convair 990.

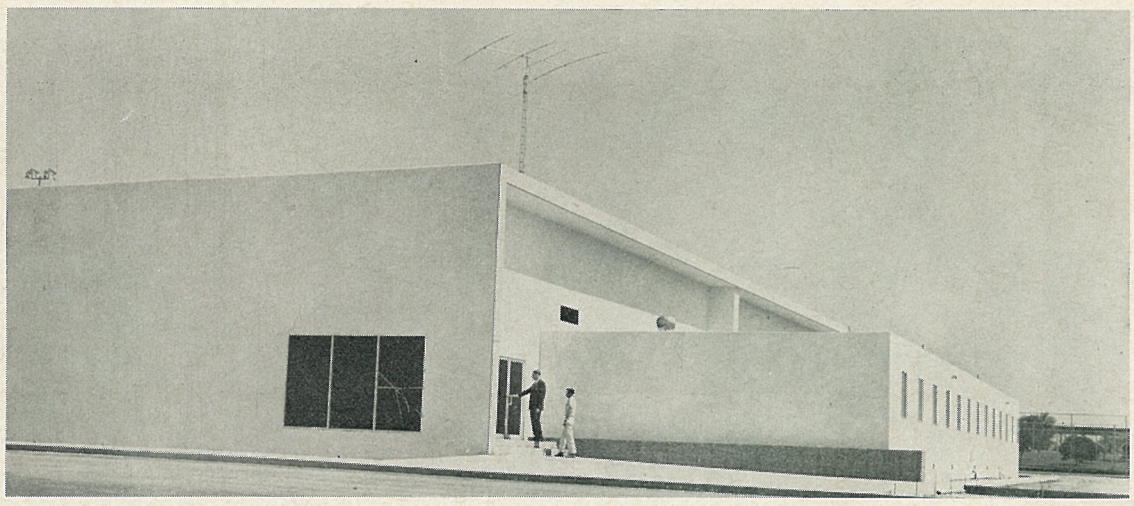
The capsule courses, called American Airlines Management Orientation, are bringing maintenance, engineering, and provisioning managers to San Diego to see the actual plane, in production and on the flight line. GD/Convair customer service is standing by to assist in any way possible, making plant facilities available and supplying specialists for information on any particular subject.

Program coordinators and lecturers of this series are H. L. Patterson and J. D'Angeli of American Airlines training section, who have conducted ground school courses at AA's main base, Tulsa, Okla. Both received their initial 990 training in GD/Convair customer service maintenance courses. Most of the men attending the three-day courses have already received American Airlines classroom training.

Several hundred AA personnel already have passed through the GD/Convair standard maintenance courses during the last year. This GD/Convair-provided portion of 990 training has been completed, however, GD/Convair instructors will be on hand to assist in any way needed during the American Airlines training sessions at San Diego, stressed L. J. Bordelon, chief of transport service.



"If you'll recall . . . the agreement was for better or for worse . . ."



HANDSOME—Scene is at main entrance to Astronautics Recreation Association's new clubhouse at San Diego. North and south wings have been in use for some time and center section will be ready before end of year. Much of labor was volunteer.

Motorcycle Riders Count Award Points

Final opportunity for members of ARA Motorcycle Club to earn points toward the club's "Rider of the Year" award comes with the group's meeting at 7:30 p.m. Nov. 1 in the ARA Clubhouse.

The "Rider" trophy is presented annually on the basis of points earned in club competitions and through meeting attendance.

GD/Astro Garden Club Plans First Meeting

A new ARA activity will be introduced to GD/Astro employees and members of their families when ARA Garden Club meets for the first time at 7:30 p.m., Nov. 8.

Slated for the Floral Assoc. Bldg., Balboa Park, first meeting will feature guest speaker Curtis Fisher of California Spray Chemical Corp., who will show a movie on rose culture.

A variety of door prizes and other gifts will be given away during the course of the evening and refreshments will be served. A question and answer period will be held to help solve gardening problems of those in attendance.

The GD/Astro group is being organized by Everett Henderson, former president of the GD/Convair Garden Club. Future meetings will cover topics such as landscaping, soil improvement, lawns, citrus culture, etc. Also included will be lessons in flower arrangement and corsage making.



LOVELY "LADIES"—Carolyn Merriam examines unusual Cattelya orchid "Abigail Anderson" as prelude to first meeting of ARA Garden Club. Topics for new organization range from orchid culture to care of lawns.

High Winds Wreck Astro Players' Parade Float But Show Goes on With Last-Minute Push

Although their first production was "gone with the wind," the show went on for ARA Astro Players drama group who designed and built the Family Service float in the recent United Fund "kick-off" parade.

High winds the day of the parade made tatters of the float built the previous evening by members of the ARA group. In a final-hour effort, George Lowin, club director and a handful of parade participants went to work, minutes before parade time, using crepe paper, free-hand art, and a good deal of determination to remake a presentable entry.

Riding the float which carried the atom-age theme "Early Counseling Prevents Family 'Fallout,'" were Art Wright, John Yellick, Millie Rankin, and Cydney Garrison and children.



REMADE—Astro Players' parade float "blew up" en route to parade route, but determined Astro band put it back together, just in time.

Mgmt. Control Post Goes to F. D. Robbins

Frank D. Robbins, formerly deputy Air Force Plant Representative at General Dynamics/Astronautics, has joined Astro as assistant to E. D. Bryant, vice president-operations.

A native of San Diego, Robbins previously worked for Convair from 1940-44 and 1946-50 following U. S. Navy duty between these periods.

His Air Force civilian jobs have included assignments at both GD/Convair and GD/Astro. He has worked at the latter since 1957 as a supervisor in contracts and administration, prior to becoming deputy AFPR in 1959.

Bryant has indicated Robbins will work in management control for operations, program management and performance to schedules.

Purchasing Agent On Research Named

A veteran military and civilian procurement specialist, J. H. Lewis, has joined General Dynamics/Astronautics as purchasing agent for research and development site activation.

Assigned to Dept. 814, Lewis reports to D. D. Knapp, general purchasing agent, and replaces I. T. Emley who has resigned his position.

A graduate of Stanford University, Lewis comes to Astronautics from North American Aviation where he was executive adviser to corporate contracts proposal section. Previously, he worked five years with the Air Force Air Materiel Command as deputy chief of foreign procurement.

ASTRO GIRL WED IN DYESS CHAPEL

DYESS AFB—Lesli Carl, GD/Astro girl assigned to Astronautics operations here, last month became the bride of Richard W. Sirstad of the Air Force. The wedding was in Dyess AFB chapel.

Save Material — Don't Throw Your Job Away!

DOCUMENTATION CHAPTER FORMED

General Dynamics/Convair and General Dynamics / Astronautics people involved in any form of documentation are invited to attend an organization meeting of a San Diego Chapter of the American Documentation Institute.

The initial meeting for election of officers and planning for a year's agenda will be tomorrow (Oct. 26) at 7 p.m. in the Astro reception building presentation room, second floor.

The Institute, incorporated in 1937, provides a form of discussion, publication, and critical analysis of all elements connected with communication of recorded specialized information, explained Keith Blair, GD/Convair chief librarian. The organization is of especial value to scientists, engineers, administrators, information specialists, data processing specialists, and librarians interested in the exploding technology of documentation, he continued.

Information and membership applications are available from Blair, ext. 1543, Plant 1; and L. Canter, chief librarian at GD/Astronautics, ext. 1073.

Renovated Cafeteria Opened for Business, Kitchen Streamlined

After a three-week diet of sandwiches and easily-transferable side-dishes, GD/Astro and Convair employees at Plant 2 are being served by a completely renovated, streamlined kitchen.

Plant 2 cafeteria kitchen, closed Oct. 9, reopened Monday for normal business.

GD/Convair plant engineering, under an Air Force contract, coordinated and supervised installation of new stainless-steel sinks, four huge ovens, a large garbage disposal and provided a sparkling green and white paint job.

Al Damarus, maintenance foreman, said modern equipment should facilitate greater speed, ease and efficiency in cafeteria handling and service.

Auxiliary to Start Beginning Bridge

A series of beginning bridge lessons for women will be sponsored by Astro Wives' Auxiliary starting Nov. 2 in ARA Clubhouse.

The course is open to wives and dependents of GD/Astro employees, and consists of 12 lessons. Classes will meet at 10 a.m. Thursdays, for two and one-half hours. Total cost of the series is $12.50.

Instructor is Ralph Woolley, La Mesa professional. Additional information and reservations may be obtained by calling Garnet Forquer, AT-4-7982.

Shooters Brave Rains, Finish Police Match

Although a scheduled short national match was cancelled due to heavy rains, 23 members of ARA Pistol Club braved threatening skies to take part in club matches Oct. 8.

A .22 police course match completed before heavy downpours found Ralph Sanderlin with 295, and Roland Schneider with 292 leading master class shooters.

A. B. Carlson won expert class with 277, followed by Don Smock with 272, while Mort Williams edged Margaret Slater five "Xs" to three in a sharpshooter round tied at 273.

Vern Weaver, scoring 247, and George Slater with 240 were top shooters among the marksmen.

Machine Shop Tops Contest

Machine shop (Dept. 731) was top unit competing in General Dynamics/Astronautics safety and housekeeping contest for September, with no cleanliness, material handling, fire or safety violations reported.

Twenty-one departments participate in the monthly contests which are scored on a weighted violation-per-employee scale by safety section of industrial relations (Dept. 130-8).

Winning safety "firsts" in September were jigs and fixtures (Dept. 451), electronics research and development (Dept. 782), support center (Dept. 344), tool and die (Dept. 452), and major assembly (Dept. 758).

Also, missile checkout (Dept. 773), processing (Dept. 733), support supply (Dept. 331), inspection (Dept. 143), tool service (Dept. 460) and engineering test labs (Dept. 560).

Ubben Assigned To Walker Post

M. R. "Rex" Ubben, formerly General Dynamics/Astronautics operations manager at Forbes AFB, Kan., has taken over a similar post at Walker AFB, N.M.

Ubben replaces A. Calman Jr. who has returned to San Diego to take a post within the product support department.

A native of Circleville, Kan., educated in Nebraska, Ubben joined Convair in 1950 as an electronics mechanic. He moved into supervision shortly thereafter and in 1955 shifted to the Palmdale flight test operation as a foreman. He was later elevated to general foreman and was chief of field operations before transferring to Astronautics.

Ubben assumed the post of Forbes AFB operations manager in 1960 and has guided that installation through the majority of tasks associated with activation of Atlas facilities.



BEFORE CHANGE—M. R. Ubben, seated left, is new GD/Astro operations manager at Walker AFB. He replaces A. Calman Jr., standing left, now with product support. L. F. Lau, seated right, filled in for Ubben while later completed work at Forbes AFB, and is now on staff of E. J. Huntsman, standing right, base activation manager for "E" and "F" bases.

ARA Calendar

(GD/Astronautics Recreation Association has some 40 activities in operation for employees. For information, call ARA Headquarters, ext. 1111.)

★ ★ ★

ASTRO DIVERS — Meeting 7:30 p.m., Nov. 7, ARA Clubhouse. Speaker Dr. H. F. Froeb, will discuss medical aspects of underwater activities.

ASTRO LENS — Model shoot 7:30 p.m., Nov. 5 in Photo Arts Bldg., Balboa Park.

ASTRO NOTES—Meeting and rehearsal every Monday, 7:30 p. m., ARA Clubhouse. New members in all voice ranges needed.

ASTRO PLAYERS — Tryouts for "Goodbye, My Fancy" at 7:30 p.m., Oct. 26 and 27; at 1:30 p.m., Oct. 29, in ARA Clubhouse. Meeting featuring former Ziegfield Follies girls, 8 p.m., Nov. 1.

ASTRO SKIERS—First meeting of season for snow ski group, 7:30 p.m., Nov. 1, ARA Clubhouse. Election of officers.

ASTRO TRAVELERS—Trailer club meeting 7:30 p.m., Nov. 7, ARA Clubhouse.

BOWLING — Entries accepted through Oct. 31 for Clairemont Bowl tournament, Nov. 11-12, 18-19. Call ARA, ext. 1111.

GARDEN CLUB — Organizational meeting, 7:30 p.m., Nov. 8, Floral Assoc. Bldg., Balboa Park.

RADIO CLUB — Meeting 7:30 p.m., Oct. 26 in radio room, ARA Clubhouse.

TENNIS — Plant championship Nov. 4, 5, 11 and 12. Enter at ARA Headquarters, ext. 1111, through Oct. 31.

'Goblins, Witches' To Invade Iceland For Annual Party

Goblins, witches, black cats and all manner of weird creatures will take to the ice for ARA-CRA Ice Skating Club's annual Halloween costume party tomorrow (Oct. 26).

Slated for Iceland, 6055 Lake Murray Blvd., festivities will last from 6:30 to 8 p.m.

ARA Commissioner Bud Davies and CRA Commissioner Martha Woodberry invited all club members and interested "trick or treaters" to join the party.

Activities during the evening will include a peanut race, balloon race, musical chairs and a Grand March.

Prizes will be awarded for best costume in both junior and senior groups. Game winners will also receive awards.

ARA Skiing Club Plans First Parley

GD/Astronautics snow ski enthusiasts will open another season when Astro Skiers hold their first meeting of the 1961-62 year, 7:30 p.m., Nov. 1 in the ARA Clubhouse.

Membership is open to all GD/Astro employees and their families—skiers and non-skiers alike. A full range of activities including parties, ski trips to winter resort areas, and competition events will be scheduled.

On the agenda for the first meeting is election of club officers, selection of a "Snow Queen" to represent the ARA club, and planning of season activities.

Larry Atwell, Dept. 101-6, is ARA commissioner.

Debbie Perella Wins Area Beauty Contest

Debbie Perella, (Dept. 521-7) was recently named San Diego's "Miss Winter Olympics" in judging involving 500 candidates from throughout the area. She is the daughter of Joe Perella, (GD/Convair Dept. 141-0).

Debbie will represent San Diego in a five-state competition for the title of "Miss Pacific Coast Winter Olympics" to be held at Malibu later this month.



FISH BAIT—ARA Fishing Club members R. A. Harwood and Ron Rafuse get lesson in fly tying from Commissioner T. B. Field, using equipment in new club workshop in ARA Clubhouse. All GD/Astro employees may use facility.

Sports & Recreation

Square Dancers Square Off For Big Hoedown-Jamboree

Some lively "steppin' and whirlin'" will take place during the All-General Dynamics Hoedown-Jamboree Saturday (Oct. 28) at American Legion Hall, 4061 Fairmount Ave.

Convair Hoedowners will host 80 square dancers from Pomona and 50 from Astronautics at the yearly "shindig."

Dinner will be served at 6:30 p.m. with dancing starting at 8 p.m.

Maury Scholz, CRA commissioner, urged all persons interested in square dancing, whether club members or not, to join the group for squares at 8 p.m.

Callers from Convair, Pomona and Astro will be on hand for do-se-do's with live music furnished by the "Square Notes," local western band.

Special attraction at intermission will feature the "Wheelacades," under direction of Lee Wadell, who have gained national recognition for their wheel-chair routines.

Rallymaster Named For Next Year's Run

ARA Sports Car Club has named George F. Lahey, Dept. 150-0, as Rallymaster for the fourth annual running of the club's Atlas Rally next April.

Early action is indicative of the effort and planning expended on the seven-hour run which is expected to attract nearly 400 entries.

GD/Astro Son Wins 'Kick, Pass and Punt'

Winner of the University Heights area "kick, pass and punt" contest sponsored nationally by Ford Motor Co., was Stephen Neuhauser, 7, whose father, P. D. Neuhauser, is in GD/Astro Dept. 305-0.

Steve displayed his football prowess by matching skills with more than 75 youngsters in the 6-10 age group. He won a regulation National Football League uniform for the best performance by a seven-year-old.



BIG GAME—Curious visitor (right background) watches while Lee Stamper, general foreman of Convair plastics, metalbond, trim, shows pert Margie Roberts use of .308 Remington rifle, one of many prizes offered by Gun Club in its annual "big game hunt." Contest is open to GD/Convair, Astro and off-site employees.

Home Port

Fishermen and Hunters Open Doors to Their New Workshop

A neat 15 by 20-ft. room in the north wing of ARA Clubhouse is "home port" for activities of the Fishing and Gun Clubs at General Dynamics/Astronautics.

The workshop, like those of other ARA activities, is designed and outfitted to suit special club interests.

ARA Fishing Club has already begun a series of workshop sessions in the new facility, which is open from 4:30 to 10 p.m. on alternate Tuesdays. Next open date is Nov. 7. There is no charge for using the workshop, an instructor is present to help with problems, and materials are available for purchase.

The shop is equipped to handle such projects as rod building and repair (rewinding), fly tying, jig building and sinker casting. An extensive library of fishing books and magazines is also available.

In addition, the shop is headquarters for an equipment rental service for GD/Astro employees. A light fresh water spinning outfit, a fly rod with automatic reel and double-tapered "HCH" line, a conventional yellowtail rod and 300 yards of 20-lb. test nylon line, a salt water spinning rig for surf or boat use, and a registered Marlin Club medium rod with 6010 reel and 500 yards of 50-lb. test dacron line are available.

Employees wishing to rent equipment should call Bill Heath, Fishing Club treasurer, ext. 1975.

Any GD/Astro employee may join the Fishing Club. Membership dues are $1 per year, and include membership in the Southwest Anglers Button Award Association.

T. B. Field is ARA commissioner. Present club officers are Alex Halyburton, president; Don Pearse, vice president; Nat Gersten, secretary; Bill Heath, treasurer, and John Maxwell, program chairman.

Club business meetings are held at 7:30 p.m. the first Monday of each month in the south meeting room of the ARA Clubhouse.

Astro Players Slate Tryouts

Tryouts for their first show of the season, and a business meeting featuring three former Ziegfield Follies members, have been scheduled by Astro Players, ARA drama club.

The "good old days of show biz" will be recalled Nov. 1 at 8 p.m. in ARA Clubhouse, to which all GD/Astro employees and their families have been invited.

Appearing will be members of the Ziegfield troupe which billed "the most beautiful girls in the world," including Bonita Morrison, GD/Astro employee.

Roles for eight men and 12 women will be filled at tryouts for the comedy "Goodbye, My Fancy," Astro Players' first production of the season. Readings will be held in ARA Clubhouse at 7:30 p.m., Oct. 26 and 27, and at 1:30 p.m., Oct. 29.

Additional information concerning Astro Players is available from George Lowin, director, at GD/Astro ext. 3694, or BR-4-0862.

Astro 'Model' Shoot Will Be in Balboa

A "model shoot" will be featured by Astro Lens, ARA camera club, at its next meeting at 7:30 p.m., Nov. 5 in the Photo Arts Bldg., Balboa Park.

GD/Astro employees Barbara King and Ennie Gillian, both Dept. 830, will model.

On Nov. 1, Southern California Association of Camera Clubs, with which Astro Lens is affiliated, will sponsor a presentation of the Eastman Kodak slide show "Photoscenic America" in Russ Auditorium.

The show begins at 8 p.m., and is open to the public without charge.



BEAUTIES — GD/Astro girls Beverly Sears, left, and Diane Baca, right, along with Lucy Signorelli and Trudy Gardner, were contestants in Vandenberg AFB Fire Prevention Queen contest recently.

Astro Tennis Tourney Nears

New GD/Astro plant tennis champions will be crowned as a result of ARA Tennis Club's tournament scheduled for November.

Preliminary rounds will be played at Morley Field Nov. 4, 5, 11 and 12, with semi-final and final events on ARA courts Nov. 19 and 20.

Singles and doubles for both men and women, as well as mixed doubles and a consolation series for first-round losers in men's singles are planned.

Entries from all interested GD/Astronautics employees will be accepted at ARA Headquarters, ext. 1111, through Oct. 31. Trophies will go to all winners, and to runners-up in all events except the consolation singles round.

ENTRIES CLOSE OCT. 31 FOR KEG TOURNAMENT

Entries in the fourth annual Astro bowling tournament will close next week (Oct. 31), reminded Jack Boyle, ARA bowling commissioner.

Applications are now at all Astro employee services outlets and at Clairemont Bowl where the tourney will be held weekends of Nov. 11-12 and 18-19.



JOINT EFFORT—General Dynamics' research engineers E. A. Bates (far right) and Edwin Campbell (fourth from right) have supervised and coordinated a GD/Convair based team of aerospace industry representatives in development of APT (Automatically Programmed Tool). Secretaries Joyce Palma and Nancy Kuhn (second and third from right) have been on loan from GD/Convair.

Computer 'Language Barriers' Attacked by Aerospace Team

Fourteen aerospace representatives now based at General Dynamics/Convair are developing a "universal language" for application of computers to manufacturing problems.

Called APT (Automatically Programmed Tool), the program is a joint effort by Aerospace Industries Association (AIA) member companies—General Dynamics included — to standardize computer programs and thus facilitate interchange of manufacturing data in the form of computer "brain tape."

"We have something of a 'language barrier,'" E. A. Bates, GD/Convair senior research engineer and national APT coordinator, explained. "Different companies have their own 'dialects' when it comes to preparing computer tape for direct production machines."

Bates said that "even within General Dynamics there were 'language differences' so that interchange involved expensive and time-consuming 'translations.'"

Establishment of APT allows General Dynamics to interchange work effectively, simply and quickly.

Bates, who received his B.S. from New York State College of Ceramics, Alfred University, and his M.S. in chemistry at University of Pittsburgh, joined GD/Convair in 1956. He has been APT's representative from the digital computer lab since 1958.

While APT is still in experimental stage, numerically-controlled machines have had a long and successful history with General Dynamics. GD/Convair was first in the United States to turn out a production part using "brain tapes."

APT, along with numerical-control, has been used to varying degrees in F-106, 880 and 990 programs and will be introduced on an expanded scale into manufacturing capability at GD/Fort Worth within six months.

Other General Dynamics men who have played key roles in development of APT include:

R. K. May, chief of applied manufacturing research at GD/Fort Worth, chairman of AIA's aerospace manufacturing committee.

Edwin Campbell, research engineer, GD/Convair, former GD/Astronautics representative to APT.

The task of continued expansion and further standardization of technique will be turned over to Armour Research, Illinois Institute of Technology, in December.

★ ★ ★

'APT' Used in Automatic Outlining, Pioneer Effort at San Diego

An airfoil contour was outlined automatically for the first time this month at General Dynamics/Convair using a programming method developed through close cooperation of three company functions.

From original data supplied by engineering loft, digital computer programmers evolved a system of mathematically defining a curved line through points, using the industry-wide APT (Automatically Programmed Tool) system. Applied manufacturing research department coordinated interdepartmental activities.

Until this time, no computing program had been developed which could be used for linking basic element line intersections (or grid points) to form any but conical shapes.

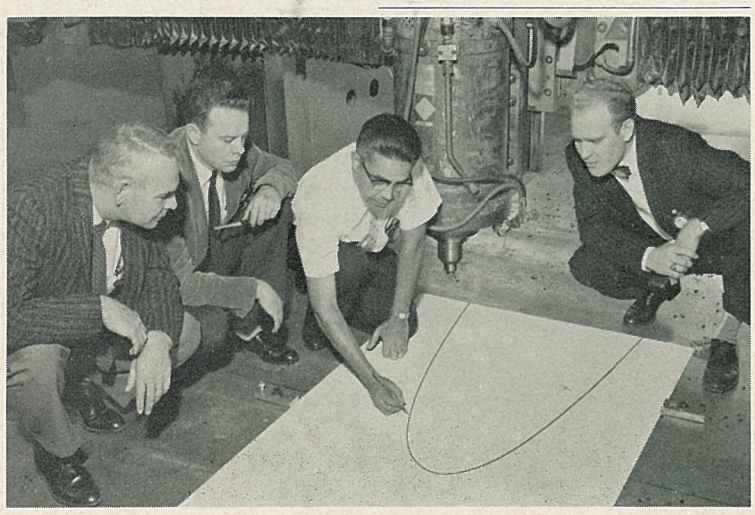
According to E. L. Moore of engineering loft, who was closely connected with the program from its inception several months ago, the new method will allow either automatic scribing or milling of an airfoil section to a high degree of accuracy on any tape-controlled contouring machine. This is but one part of an overall numerical-control research and development program sponsored by the company over the last year.

The trial run saw a leading edge rib for the basic Convair 880 scribed automatically on a white-painted aluminum layout board by a tape-controlled Giddings and Lewis skin mill at Plant 2.

"The test proved that now it is possible to attain accurate external airfoil layouts quickly by the computer 'mill-scribe' program," Moore continued. "This will eliminate a great many manual calculations and manual drawings and could, eventually, cut lead time between design and production by as much as half."

W. J. Wood, as engineering loft group engineer, was directly responsible for that section's part in the cooperative effort.

Developing the analytical routines for loft work were R. I. Hagar, APT system representative for GD/Convair, and D. R. Eaton, programmer, both reporting to Dr. Leo Lapidus of the digital computing lab. S. C. Padilla of applied manufacturing research, which is directed by W. E. Wise as chief, coordinated the project.



TRIAL RUN—S. C. Padilla points to machine-scribed loft line for 880 part using computing system preparation program just developed at GD/Convair. Intently viewing results of months of study are, from left, E. L. Moore, R. I. Hagar, Padilla, D. R. Eaton.

Two More B-58s Join 305th Wing

A total of 14 B-58s now belong to the 305th Bomb Wing at Bunker Hill AFB following recent delivery of two Hustlers to the Indiana base.

Hustler No. 81 was delivered in a flight which lasted four hours. Crew consisted of Maj. H. E. Flook, pilot; Capt. L. Broome, navigator; and 1st Lt. C. R. Leonard, DSO.

In a 3-hour, 35-minute delivery flight a few days later, No. 77 was delivered to the Indiana base. Lt. Col. J. J. Trevisana was pilot; Capt. B. A. Silva Jr., navigator; and 1st Lt. J. S. Coryat, DSO.

Build-up of the second wing of B-58s at Bunker Hill continues, with delivery of three more production Hustlers—Nos. 78, 80 and 85—tentatively slated for late October.

According to a SAC release made earlier this year, the 305th will be fully equipped with a full complement of 40 B-58s by May, 1962.

B-58 ENGINE CHANGE BREAKS OLD RECORD

A Carswell AFB maintenance crew changed a B-58 engine in the record time of 3 hours, 30 minutes this month, besting the previous record by 1½ hours.

An engine change involves taking off the engine, performing necessary maintenance, installing the engine, and finally conducting engine runs and final inspection.

No. 3 engine on TB-58 No. 12 was changed Oct. 4 and the aircraft was flown that afternoon, without a single "squawk" on the engine.

Crew making the change was S/Sgt. Edwin A. Bruner, S/Sgt. Edward Euglow, A/1C David L. Lake, and A/1C Elbert H. Woodall.

Supervisors in the project included C/MSgt. John B. Shinn Jr., S/MSgt. Ronald E. Schoonover, and S/MSgt. Wesley E. Davis.

CAB, FAA Men Trained in 990

Two Civil Aeronautical Board officials, both from Washington, D.C., and three Federal Aviation Agency representatives ended a two-week training course on the Convair 990 at General Dynamics/Convair last Friday.

Special familiarization lectures were arranged by customer transport service instructors to meet specific needs of the two groups.

CAB men, J. H. Lewis and H. H. Black, as aircraft accident investigators, were concerned primarily with 990 escape systems and emergency equipment.

The three FAA men spent their time in a program on 990 engines and systems receiving power from the engine. They were: Lyle O. Combs, aircraft modification design engineer from Oklahoma City; E. B. Saul, air carrier maintenance, Los Angeles; and J. R. Ball, electronics engineer, also Oklahoma City.



DOLLAR SAVER—J. V. Dickson, left, GD/Astro, who submitted $1-million-plus Cost Improvement Proposal recently, shows M. F. McDonald, GD/Astro manager of organization and systems, Chamber of Commorce trophy awarded him.

All Records Smashed By Million Dollar CIP

A million-dollar Cost Improvement Proposal (CIP)—the largest since the CIP program's inception—has been approved for installation at General Dynamics/Astronautics.

James V. Dickson, depot and support contracts administrator (Dept. 110-0), submitted the idea which calls for consolidation of several operational spare parts contracts to support all related production contracts.

The single spares support contract innovation, expected to save $1,078,000 in its first year of use at GD/Astro, may also be applied as standard Air Force practice to future major weapon system programs.

Dickson's idea eliminates hundreds of pounds of paperwork previously required to document spares for several programs individually.

Several thousand documents, each requiring separate procurement and delivery action, will no longer be needed, and the total number of high value items required is reduced. Individual provisioning parts breakdowns (PPBs) formerly necessary to back spares items on each contract, are eliminated, with this item alone saving over $75,000 yearly in preparation and reproduction costs.

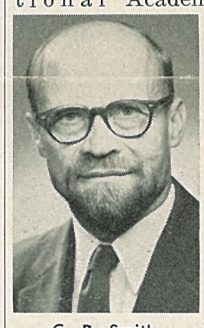
The CIP plan for salaried employees and the Employee Suggestion (ES) program for hourly employees are administered at GD/Astro by organization and systems (Dept. 170).

Hourly employees receive cash awards for accepted suggestions. In the case of CIPs, a record of acceptance is placed in the personnel file of the individual submitting them, and is considered in connection with periodic performance reviews.

In addition, CIPs such as Dickson's, which result in extraordinary savings, earn their originators nominations for the annual President's Award.

C. R. Smith to Speak To Science Academy

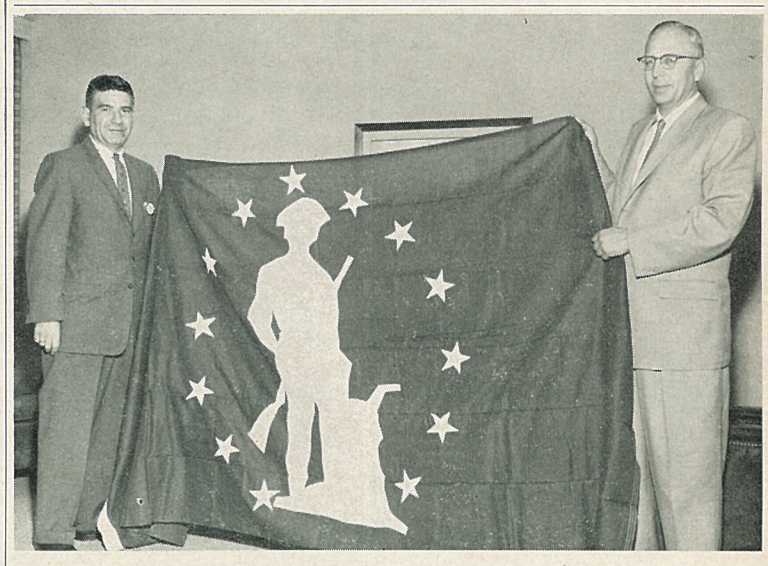
Clarence R. Smith, design specialist in General Dynamics/Convair fatigue laboratory, will be guest speaker before the National Academy of Sciences, Washington, D. C. on Nov. 7.



C. R. Smith

His paper is titled, "The Cause and prevention of Fatigue Failures in Metallic Structures."

Smith is nationally known for his work on fatigue of metal structures. Some of his innovations, such as edge-driven rivets and auxiliary thin doublers, are known to increase structural longevity by five to 100 times.



"OUTSTANDING"—In recognition of "outstanding record" in U. S. Savings Bonds buying by personnel of General Dynamics divisions, "Minute Man Award" was made this month at San Diego. Holding flag are R. H. Biron, right, senior vice president—industrial relations, and J. L. Budros, director of personnel administration.

General Dynamics Bond Buyers Earn Minute Man Flag Award

A "Minute Man Award" was presented at San Diego this month in recognition of "an outstanding record of participation in the payroll savings plan" for purchase of U.S. Savings Bonds.

Specifically, the award from Treasury Secretary C. Douglas Dillon, involved the records of General Dynamics/Pomona, General Dynamics/Convair, General Dynamics/Astronautics and General Dynamics/Fort Worth. It included permission to fly the "Minute Man" flag.

More than half of the employees in these divisions currently purchase bonds by regular payroll deduction. According to the latest figures available, $386,359 is deducted every week for this purpose, or more than $20 million each year!

Are We Giving  Our Fair Share?

GD

ASTRONAUTICS EDITION

GENERAL DYNAMICS

NEWS

Vol. 14, No. 23 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 8, 1961



READY! SET! GO!—J. R. Dempsey, Astronautics president, standing, kicks off Con-Trib-Club drive at staff meeting. Goal of over half million dollars has been set.

Half Million Dollars Goal of Con-Trib-Club In Membership Drive

With "fair share" giving and substantially increased participation the goals, General Dynamics/Astronautics is set to launch an all-out membership drive for its Employees' Con-Trib-Club.

The drive opens Friday (Nov. 10) and closes Nov. 24.

Dollar contributions of $504,000 and 92 per cent participation are twin goals.

If the former is attained, Astronautics Con-Trib-Club plans to earmark $382,000 of the total as its "fair share" of the current United Fund of San Diego County campaign. United Fund is striving to raise $4.6 million locally to support 97 hard pressed agencies. Con-Trib-Club would retain $52,000 to operate its own Emergency Aid Program. The remaining $70,000 would be disbursed to charitable agencies outside United Fund.

Since Con-Trib-Club has pledged an effort in meeting its share of the United Fund goal it is, in turn, encouraging employees to consider this means in meeting the twin goals.

Exacting studies of national giving practices, local needs and salaries, etc., have been made in setting fair share giving scales. Those recommended show how an employee could meet his community obligations by giving weekly or bi-weekly.

Once an employee has authorized Astronautics to deduct a set amount per pay check, the rest is simple. Deductions are automatic and disbursements are under direction of an Employees' Committee composed of representatives of management and unions.

Con-Trib-Club membership efforts are the only fund-raising drives held annually within Astronautics. Members are given window decals denoting they have given "once to support all" local charities.

J. R. Dempsey, Astronautics president, is serving as chairman.

He has praised the work of Con-Trib-Club in the past, but cautions that even more support is needed now to offset critical conditions facing local agencies.

"As employees of the largest industrial firm in the area and as private citizens we must pause to consider just what our moral obligations to the community are," Dempsey said.

"Our Con-Trib-Club offers an easy and systematic means by which we may meet these obligations."

Some 2,000 Astro employees are acting as volunteer helpers. This week they have been attending a series of meetings to acquaint them with the drive, its importance and its operation.

Friday (Nov. 10) they will spread out to distribute special tab cards to all employees. Nonmembers of Con-Trib-Club may join by signing cards and authorizing payroll deductions. Present members may use the cards to increase their contributions in line with their present salaries, fair share giving, etc.

The overall Astronautics goal of $504,000 has been sub-divided into many departmental goals based on employees, salaries, etc. Each department will be working to attain its own as well as the division goal.

Dollar Goal Applies To San Diego Area

GD/Astronautics' annual Con-Trib-Club membership drive is a division-wide effort, reaching every base.

However, the overall dollar goal of $504,000 has been set for the San Diego area alone, including Sycamore Canyon.

Employees residing in off-site areas are better informed as to welfare needs of their own communities. Thus, they are setting their own dollar goals.

As in the past, Con-Trib-Club funds raised in off-site areas are all disbursed locally.

Astronautics Praised For Work on 'E' Sites

"It should be apparent to all that in the face of the tightest schedule deadlines, severe limitations on costs and a myriad of difficulties, not of your own making, the early delivery of Atlas 'E' sites substantially within original cost estimates is an accomplishment of which we may all be proud."

Col. J. L. Zoeckler, USAF, Atlas System Program Director of the Ballistic Systems Division, wrote these words recently to J. R. Dempsey, GD/Astronautics president, and to all Astro employees.

Colonel Zoeckler pointed out: "All too often, in the conduct of our most urgent ballistic missile programs, our concentration on resolution of day-to-day problems and our attention to areas of critical weaknesses distracts us from long range objectives and prevents a truly objective view of our program accomplishments.

"It is particularly gratifying to note that in a period plagued with labor management problems, effective pre-planning avoided any serious incident in this program.

"It is equally noteworthy that the entire activation program was conducted with a most enviable safety record," Colonel Zoeckler added.

Further praise was directed to the manner in which both base and main plant personnel responded to unforeseen problems such as rescheduling of complex installation and checkout activities to accommodate major revisions.

Colonel Zoeckler praised Astronautics for retaining competent personnel whose valuable experience will further aid activation of "F" series bases. He cited retention of top personnel in this high priority effort.

"Please accept sincere appreciation from the entire Atlas Program Office for yourself and all those who have worked so effectively in making possible this most essential addition to our Nation's deterrent strength," he concluded.

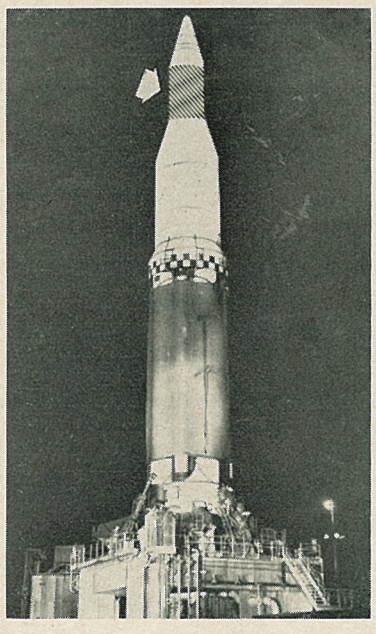
Model of Centaur Fired Into Space

Riding into space aboard the first Saturn space exploration vehicle launched was a full-scale model of the Centaur space vehicle produced by General Dynamics/Astronautics.

Launch occurred late last month at Cape Canaveral under direction of the National Aeronautics and Space Administration (NASA).

The Centaur used was a complete flight-type airframe, a forerunner of future launch vehicles that will carry instrumented vehicles to the moon and on

(Continued on Page 2)



BIGGEST — Saturn launch vehicle towers on pad at Cape Canaveral before successful maiden flight. Arrow indicates Centaur space vehicle section built by GD/Astro, which for this flight was non-operating replica.

Emergency Aid Has Important Role in Con-Trib-Club Affairs

Con-Trib-Club funds in excess of $34,000 were spent during the past fiscal year to assist General Dynamics/Astronautics employees and families faced with emergencies beyond their control.

This assistance, provided by Con-Trib-Club's Emergency Aid Program, is a vital part of the total Con-Trib-Club effort.

It is, in short, a means of helping "our own."

Con-Trib channels an automatic 10 per cent of all income into the Emergency Aid Program.

Over the past year 206 cases were approved for financial assistance by Con-Trib-Club. Those helped were working at both the main plant and off-site locations. In addition, several hundred others were counseled.

Emergency Aid is an outright grant, not a loan. Employees receiving help are not expected nor required to repay.

Some indication of help granted is reflected in amounts spent in various types of assistance. For instance, almost $13,000 went to defray medical expenses, with another $10,000 paying hospital costs. Meeting rent costs came to $6,000 while over $2,000 went for food. Clothing, utilities and travel each required approximately $500, while a smaller amount went to defray insurance costs. Over $1,000 covered a variety of items listed under the heading of miscellaneous.

Information on Con-Trib-Club's Emergency Aid Program is available through employee services offices at the main plant and off-site bases.

Homeless Children, Sick, Crippled Benefit From Your Con-Trib Funds

Membership in GD/Astronautics Employees' Con-Trib-Club is a far-reaching affair.

Each contribution benefits at least 216,000 families over a year's time!

That is an estimate of the number helped in one way or another in the San Diego area by United Fund charities alone. And, besides the 97 agencies included in the United Fund, Con-Trib donates to 30 others during the year!

To be sure, some of these hundreds of thousands benefit to a minor degree—a needy child's teeth are checked—but others are helped in major manner. For example, a crippled child receives an operation so he can walk; a broken home is re-established; a seeing eye dog bought for a blind veteran.

Con-Trib funds which went last year to United Fund groups helped support boy and girl societies in all parts of the county. Boys' Clubs in San Diego, Carlsbad, Chula Vista, Oceanside provide recreation for thousands of boys from 7 to 19. Boy Scouts, Camp Fire Girls, Girl Scouts are all aided in their program of wholesome recreational activities for young people. YMCAs and YWCAs offer a wide range of recreation, health, and social activities for entire families and servicemen.

Family Service Association counseling helps bring together broken families, helps work out problems in the home. Guadalupe Clinic gives care to children and babies, with more than 200 doctors and dentists donating their time.

The Salvation Army gives help

(Continued on Page 2)

Log Book Entries

Official Notices

CONTROLLED MS

Effective Nov. 1 for Bldg. 5, Plant 71, only manufacturing specifications (MS) bearing blue print file validation stamps shall be used for manufacturing operations and inspection acceptance based upon manufacturing specification requirements.

N. D. Baird, Supervisor, Manufacturing Specifications (Dept. 290-1)

POWER SHUT-DOWN

There will be a complete power shut-down at Plant 71 Sunday, Nov. 12. All yard areas and buildings will be without electrical power or lighting from 7 a.m. through midnight.

R. D. Leonard, supervisor, Plant Engineering, Dept. 250-2.

Promotions

MAIN PLANT

Promotions to or within supervision effective Oct. 23.

Dept. 101-1, Business Data Processing: To clerical asst. supervisor, W. M. Pelton.

Dept. 105-0, Advanced Product Planning: To chief manager of plans, D. M. Digges.

Dept. 130, Industrial Relations: To wage administrator, R. Kerr. To clerical asst. supervisor, P. L. Shipherd.

Dept. 131-2, Off-Site Industrial Relations: To chief of off-site industrial relations, O. P. Liebreich Jr.

Dept. 175-0, PACE Services: To office services supervisor, E. M. Eppstein, J. R. McIntire. To clerical asst. supervisor, J. T. Johnson.

Dept. 220-1, Manufacturing Control: To manufacturing control general supervisor, A. J. Halyburton.

Dept. 321-6, Personnel Systems Engineering: To personnel subsystems asst. supervisor, G. P. Koshiol.

Dept. 322, Support Publications: To support publications general supervisor, D. W. Rogers. To support publications supervisor, E. S. Bill.

Dept. 335, Service Parts: To support logistics asst. supervisor, J. W. Minick, N. A. Sulek.

Dept. 350-1, Support Field Operations: To chief, product support-base, A. P. Cofano.

Dept. 351, Field Modification: To support calibration group engineer, J. L. Hall. To field modification group engineer, D. P. Koenig. To asst. supervisor OSMB, F. M. Campbell. To manufacturing control asst. supervisor, R. W. Newkirk, L. D. Stepter. To manufacturing control asst. foreman, F. D. Harkins.

Dept. 510-2, Engineering Department Management: To senior project engineer, E. R. McFadden.

Dept. 539-9, Design Liaison: To asst. design group engineer, R. R. Wahler.

Dept. 556-5, Electronics Design: To senior electronics group engineer, J. E. Leib.

Dept. 756-0, Engineering Test Support: To general foreman, R. T. Bauman.

Dept. 759-0, Sub-Assembly and Mock-up: To asst. foreman, J. J. Fromlath.

Dept. 832-1, Procurement Planning: To material control general supervisor, R. E. Sabin.

Dept. 840-0, Material Cost and Administration: To manager of material cost, R. H. Quinn.

ALTUS AFB

Dept. 617, GD / Astronautics Operations: To production control asst. foreman-base, B. B. Bludworth. To activation engineering asst. supervisor-base, L. D. Brown, A. A. Frandsen. To asst. foreman, N. C. Hackney, T. N. Moraga.

DYESS AFB

Dept. 618, GD / Astronautics Operations: To launch complex asst. supervisor-base, A. M. Fader. To asst. foreman, R. A. Ovington, E. W. Wine.

LINCOLN AFB

Dept. 616, GD / Astronautics Operations: To task control supervisor, J. J. Guss. To foreman, J. W. Collins. To asst. foreman, C. E. Sparks Jr.

PLATTSBURGH AFB

Dept. 620, GD / Astronautics Operations: To chief of launch complex group, W. D. Taylor. To asst. foreman, E. J. Buentgen, V. L. Ogle.

SCHILLING AFB

Dept. 615, GD / Astronautics Operations: To launch complex asst. supervisor, C. B. Rogers. To asst. foreman, D. L. Stamp.

VANDENBERG AFB

Dept. 576, GD / Astronautics Operations: To chief of site engineering, E. C. Sims.

WALKER AFB

Dept. 619, GD / Astronautics Operations: To task control supervisor-base, J. P. Westler. To production control asst. foreman-base, C. M. Box, D. Dietz, T. H. Gantt. To asst. foreman, J. K. Gaskins, R. H. Smith.

WARREN AFB

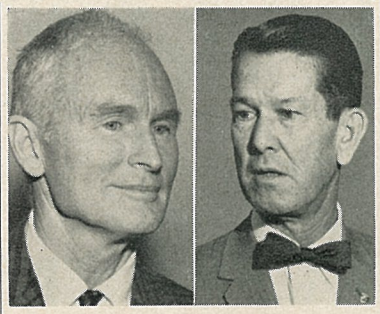
Dept. 611, GD / Astronautics Operations: To inspection asst. supervisor, L. T. Davis. To asst. foreman, N. E. Erstad.

Personals

LINCOLN AFB

Our heartfelt thanks to all those extending sympathy and help following the recent loss of our wife and mother. This kindness will always be remembered.

Emil Nitz,
Mr. and Mrs. Charles Nitz
Dept. 616-1.



Two more 25-year men joined ranks at GD/Astronautics recently. They are John W. Hanna, Dept. 536-3, left, and O. D. Mecham, Dept. 344-1.

Service Emblems

MAIN PLANT

Service emblems due during the period Nov. 1 through Nov. 15.

Twenty-year: Dept. 220-3, B. J. Yoakum; Dept. 280-1, J. E. Cook, Richard Miller; Dept. 324-1, W. D. Nowell; Dept. 342-3, H. A. Benner; Dept. 451-0, G. L. Ford; Dept. 453-0, T. F. Suter; Dept. 521-2, J. A. Lasater; Dept. 522-2, J. G. Ruzzat; Dept. 756-0, E. G. B. Blaauw.

Fifteen-year: Dept. 100-0, C. S. Ames Jr.; Dept. 195-0, O. S. Gjerset; Dept. 220-6, Frances S. Riley; Dept. 480-0, G. H. Greim; Dept. 606-0, K. C. Cumberledge; Dept. 773-0, Sam Modica.

Ten-year: Dept. 130-7, C. K. Gudgell; Dept. 141-2, D. E. Billinghurst; Dept. 170-5, C. L. Hawes; Dept. 212-3, Mabel P. Mize; Dept. 220, H. G. Dietrich, L. A. Kline, J. R. Luker; Dept. 250-3, A. B. Jerke, D. M. Skinner; Dept. 401-3, Burke Smith; Dept. 549-7, R. D. Reed; Dept. 556-5, A. C. Morse; Dept. 592-3, Grace P. Vella; Dept. 756-0, S. R. Shore Jr.; Dept. 759-0, D. L. Myers; Dept. 781-0, V. M. Myers.

ALTUS AFB

Ten-year: Dept. 617-3, H. B. Wilson.

DYESS AFB

Ten-year: Dept. 618-4, R. C. Morris.

FAIRCHILD AFB

Twenty-year: Dept. 613-1, A. T. Bryan.

FORBES AFB

Ten-year: Dept. 614-3, A. A. Lock.

LINCOLN AFB

Fifteen-year: Dept. 616-7, C. T. Jahnke.

Ten-year: Dept. 616-4, J. N. Trail.

PLATTSBURGH AFB

Twenty-year: Dept. 620-1, K. W. Spence.

SCHILLING AFB

Twenty-year: Dept. 615-0, E. E. Durbin.

VANDENBERG AFB

Fifteen-year: Dept. 576-3, J. C. Ardoin, P. R. Huitt.

Births

MAIN PLANT

CASPER—Daughter, Joell, 7 lbs., 9 oz., born Oct. 14 to Mr. and Mrs. Marvin D. Casper, Dept. 603-1.

COX—Son, Gerald Marshall, 9 lbs., 7 oz., born Oct. 5 to Mr. and Mrs. Robert M. Cox, Dept. 603-1.

LUNA—Daughter, Leticia, 8 lbs., 5 oz., born Oct. 4 to Mr. and Mrs. Robert Luna, Dept. 145-2.

VALDEZ—Son, Bruno Simon, 8 lbs., 10 oz., born Oct. 6 to Mr. and Mrs. Onofre Valdez, Dept. 771.

FORBES AFB

MARTIN—Son, David Richard, born Oct. 20 to Mr. and Mrs. R. E. Martin, Dept. 614.

SCHILLING AFB

POST—Son, Warren Neil, 7 lbs., 3½ oz., born Sept. 29 to Mr. and Mrs. Russell Post, Dept. 615-1.

Deaths

PLATTSBURGH AFB

MARSH—Philip Carl Jr., Dept. 620-5. Died Oct. 19. Survived by wife, Reba, and three children.

Model of Centaur Fired Into Space

(Continued from Page 1)

interplanetary scientific missions.

Advance planning and preparations for integration of the Centaur upper stage for the Saturn flight were directed by Astronautics' launch crews making up part of the overall launch team directed by NASA's Marshall Space Flight Center.

Centaur is an oxygen-hydrogen powered vehicle with two 15,000-pound-thrust engines. Its unique ability to start and stop at predetermined times while moving in space, plus its ability to "coast" between periods, will enable it to accomplish many scientific missions.

Centaur is also scheduled for launch aboard modified Atlas launch vehicles.

General Dynamics NEWS

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What Is Fair Share Giving?

What is a "fair share"?

It is an amount, smaller for lower incomes and larger for higher incomes, that represents the individual's responsibility toward community charity.

Not all Employees' Con-Trib-Club members are giving their "fair share," which means that others must give more.

For employees making $2.10 to $2.31 an hour, a "fair share" is considered 50 cents a week. For $2.32-$2.53 it is 55 cents a week, moving up to 75 cents a week for $3.20 to $3.41 an hour.

For salaried employees with annual incomes of $5,000 to $5,999, a "fair share" is $1.60 every two weeks. For incomes of $6,000 to $6,999 it is $1.90 every two weeks. For $8,000 to $8,999 incomes it is $2.50 every two weeks.

Another Keg League Started at Lincoln

LINCOLN AFB — A second bowling league for wives who are newcomers to the area has been started by GD/Astro Wives' Club here.

Brown Labor Relations Mgr. As King Goes to Corp. Office

New assignments for a trio of General Dynamics/Astronautics executives have been announced by M. V. Wisdom, director of industrial relations.

Roger W. Brown, manager of off-site industrial relations, has assumed additional duties as manager of labor relations, replacing R. E. King. King has moved to General Dynamics corporate office as assistant to R. H. Biron, senior vice president — industrial relations.

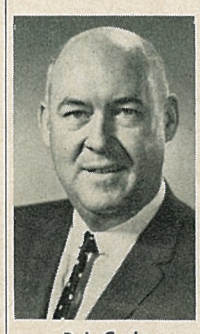


Roger Brown

Reporting to Brown will be: O. P. Liebreich, chief of off-site industrial relations; and R. L. Craig, labor relations administrator.

A native of Danville, Ill. and a graduate of the University of Illinois, Brown joined General Dynamics in 1956 after working with General Motors and North American Aviation. After two years in industrial relations staff work Brown became chief of industrial relations at Astronautics' Air Force Missile Test Center operation, moving to a similar post at Vandenberg AFB the following year. He returned to the main plant in 1959 to become chief of off-site industrial relations.

Craig, from Akron, Ohio, is a graduate of Ohio State and holder of a certificate in industrial relations from Yale University.



R. L. Craig



O. P. Liebriech

He worked for a number of years in industrial relations tasks for the Youngstown Sheet and Tube Co. He joined Astro in 1957.

Liebreich is a University of Connecticut graduate and a native of New York City. After joining Convair in 1953 he worked in manufacturing control, manufacturing engineering, tooling and engineering before shifting to industrial relations as a wage and salary analyst in 1955. In 1958 he transferred to Astronautics as an analyst.

Evening Shorthand

A course in advanced shorthand will be offered by educational services (Dept. 130-3) to General Dynamics / Astronautics employees after normal working hours.

The 30-hour course will concentrate on speed and accuracy improvement, emphasizing scientific and engineering vocabulary. Classes meet from 5:15 to 8:15 p.m. on Wednesdays starting Nov. 15 in Bldg. 17, room 2.

Instructor is Paul Green, Dept. 130-4. Additional information can be obtained from Laura, ext. 1933.



CONTRACT EXECUTIVES—Shown with C. W. Blakey, director of contracts, are department managers named as result of recent functional realignment. From left are A. T. Wood, Blakey, R. A. Wohl, R. J. Riddell.

GD/ASTRO CONTRACTS DEPT. REALIGNED AS SCOPE EXPANDED

Realignment of General Dynamics/Astronautics contracts (Dept. 110) including creation of a new manager's post, was announced recently by C. W. Blakey, director of contracts.

The department reorganization is the result of GD/Astronautics expanded activity in various space and electronics fields.

Reporting to Blakey under the new alignment are R. J. Riddell, manager of contracts — Atlas weapon systems, and A. T. Wood, manager of contracts—space and special programs. Both were previously chiefs of contract administration for activation and support, and development and production, respectively.

The new post of manager of contracts-administrative support, is filled by R. A. Wohl, former contract coordinator, also reporting to Blakey.

"Previous department organization was basically designed for administration of the Atlas program," Blakey said. "The new alignment gives more appropriate recognition to GD/Astronautics expanded scope of activity, and the increased importance of the administrative support function headed by Wohl."

Wohl is a native of Chicago, Ill., who joined GD/Astronautics in 1956 as a contract analyst. He is a graduate of San Diego State College and attended University of Wisconsin, University of California School of Law at Berkeley, and University of San Diego from which he received his bachelor of laws degree. He was admitted to the California Bar in 1961.

Save Material — Don't Throw Your Job Away!

Homeless Children, Sick, Crippled Benefit From Your Con-Trib Funds

(Continued from Page 1)

to anyone in need; San Diego Children's Home provides homes for school-age children who cannot stay in their own homes; San Diego Society for Crippled Children operates a pediatric hospital with complete care for children.

Community chests and welfare associations in outlying communities, such as Fallbrook, Lakeside, Ramona, El Cajon, give emergency help to anyone in distress.

Travelers Aid Society provides information, counseling, emergency assistance to service families, travelers, newcomers. Visiting Nurses of San Diego, La Jolla, Escondido send trained nurses into homes for mothers with new babies, aged people, bedfast invalids.

San Diego Braille Club is devoted to making lives of the blind more comfortable and interesting; San Diego Hearing Society helps people with impaired hearing to learn lip reading, provides a deafness prevention program.

In all, Con-Trib donations go to help the needy, the blind, the deaf, the aged; homeless childres; sick and crippled youngsters; the lost and the lonely. And, a great share is directed to help build healthy, active bodies and minds of young people.

Employees' Con-Trib Reports On July-September Activity

During the period from July 8 to Sept. 30, General Dynamics/Astronautics Employees' Con-Trib-Club made the following disbursements:

SAN DIEGO AREA

United Fund	$50,000
Children's Dental Health Center	1,000
American Cancer Society	4,865
San Diego Council of Churches	750
Escondido Boys' Club	1,000
Episcopal Community Service	1,231
YWCA	2,000
Family Service Association	2,000
Braille Club	126
Crossroads Foundation	1,000
Neighborhood House	2,000
Guadalupe Clinic	2,000
Child Guidance	2,000
Big Brothers	500
Homemakers Service	2,000
Community Welfare Council	2,000
San Diego Boys' Club	2,000
Urban League	1,700
Travelers' Aid	1,000
Jewish Community Center	1,000
Girl Scouts	481

OFF-SITE BASES

Vandenberg AFB	$14,720
Warren AFB	4,900
Fairchild AFB	7,000
Forbes AFB	500
Lincoln AFB	2,190
Walker AFB	500

FINANCIAL STATEMENT

A total of 61 Emergency Aid cases received assistance during the reporting period.

	Emergency Aid Fund	Charity Fund
Balance (July 7)	$19,211.84	$108,131.67
Income during report period	11,014.39	99,671.31
Total	$30,226.23	$207,802.98
Expended during report period	$ 9,414.27	$110,967.33
Balance (Sept. 30)	$20,811.96	$ 96,835.65

Con-Trib Members See For Themselves 'Where Your Money Goes'

On surprise visits last week, GD/Convair and GD/Astro Employees' Con-Trib-Club representatives inspected seven of United Fund's 97 agencies which Con-Trib helps support.

They toured Neighborhood House, Salvation Army, Family Service, Youth Activity Center for Mentally Retarded Children, downtown YMCA, Children's Hospital and Traveler's Aid.

"This is amazing," commented Nep Peralta, GD/Convair union committeeman (IAM), leaving Neighborhood House. "I had no idea the need here is so great . . . it must be met."

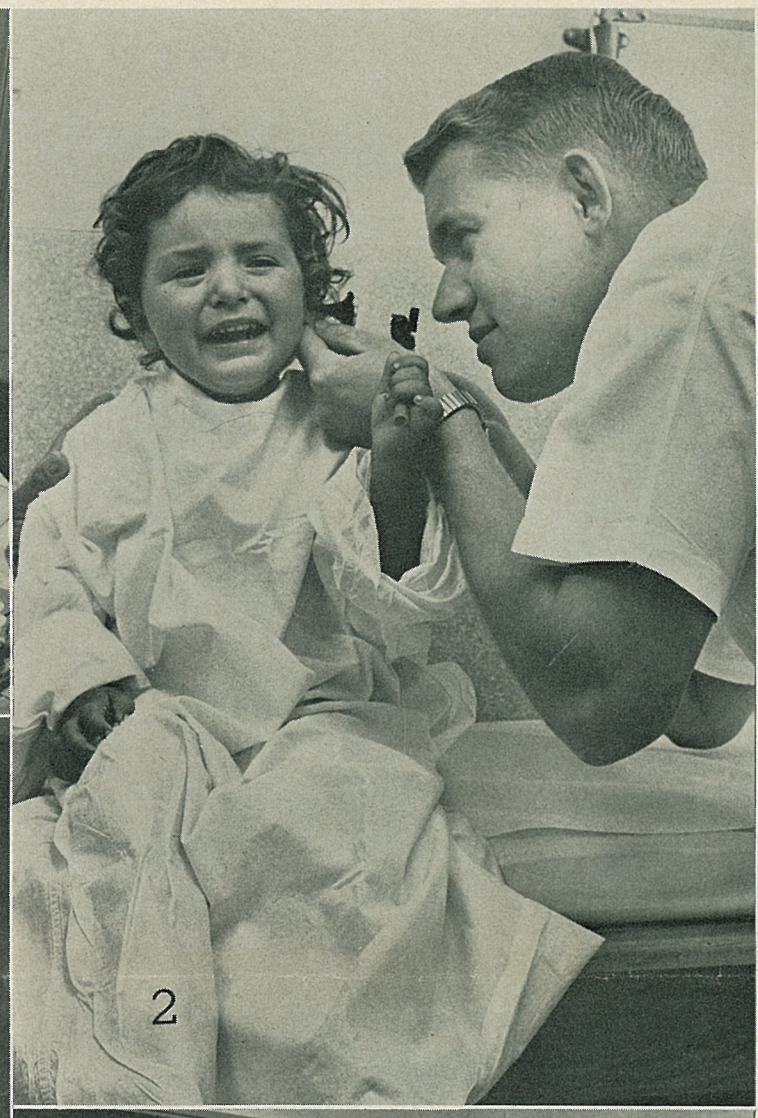
After posing with a small boy once seriously ill, now almost recovered, GD/Astro Con-Trib committeeman Ernest Buck asked, "Is there a more satisfying feeling than the knowledge that my small contribution may have helped . . . that the very emergency bed which this youngster is using was donated by Astro Con-Trib . . ."

June Ward (GD/Convair Dept. 8), discussing an acquaintance helped by Family Service, said, "These people are doing a unique job. They helped 192 Convair families last year. I personally know one wife whose marriage was saved . . . she is a new person . . . happy again . . . children secure in a united home."

"Inspirational," Paul Pearson, GD/Convair supervisor, said while conferring with the youthful director of the Mentally Retarded Activity Center. "I'm convinced our donation was well spent."

Voicing what each must have felt leaving the day's last stop, Molly Dowell, GD/Convair Con-Trib's acting secretary, remarked: "I only wish that every Con-Trib member had made this trip. Surrounded by our own concerns, it is easy to forget the great good these agencies are achieving—and their urgent need for our unstinting support. It made us feel we must do more!"











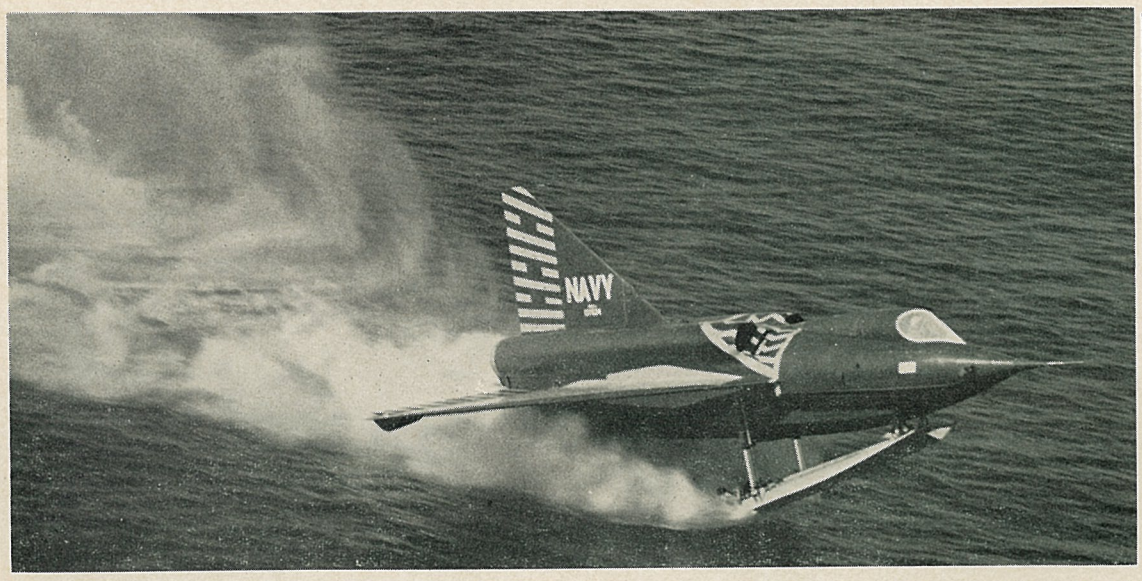








MAKING THE ROUNDS—Con-Trib-Club representatives from GD/Convair and GD/Astro are shown on tour of United Fund agencies. (1) GD/Convair's Molly Dowell (right), acting Con-Trib-Club secretary, and June Ward (Dept. 8) admire textile work done by mothers at Neighborhood House. (2) Mercy Hospital intern, Dr. Andrew Janzen, inspects small-fry's ear at Guadalupe Clinic. (3) Nevin Wiley, executive director of Family Service Association, explains functions to Paul Pearson, GD/Convair supervisor, Ernest Buck, GD/Astro Con-Trib committeeman, and Nep Peralta, GD/Convair union committeeman (IAM). (4) Sr. Major Howard Sloan, Salvation Army commander, shows toys which will be distributed to needy this Christmas. (5) Peralta and Pearson look on during "free hour" at Youth Activity Center, Association for Mentally Retarded Children. (6) Marcia Wheat of Children's Hospital, displays films donated by GD/Convair Con-Trib. (7) Buck smiles as playful youngster, sitting on emergency table donated to Children's Hospital by GD/Astro Con-Trib, laughs at cameraman. (8) Swimming instructors at downtown YMCA teach beginner. (9) Jerry Schultz (right), GD/Astro Con-Trib-Club secretary, and Larry Janson (left), GD/Astro Con-Trib-Club committeeman, watch while Clairemont Boys' Club staff member oversees construction of Halloween masks.



ANOTHER DELTA—Delta wing was applied to sea as well as land planes. This was "Sea Dart," built for Navy. It also had novel application of high-speed ski.

Plant 2 at SD 'Revived' In 1953 For F-102 Work

(Installment No. 71 of continuing history tracing background of General Dynamics products sees F-102s going into production for the Air Force and three other delta-winged firsts, Sea Dart, Pogo, and B-58 under development at Convair.)

A new Air Force procurement policy was tried for the first time in the F-102 program. This was the Cook-Craigie plan, named for Lt. Gen. Orval R. Cook and Laurence C. Craigie. Instead of starting full-scale production as soon as a new model is accepted, the contractor delivers a trickle of units for 18 months while exhaustive flight tests are conducted. Any major changes or improvements are incorporated into permanent factory tooling, so that combat-ready planes are delivered when mass production starts.

Convair moved an F-102 task force into empty Plant 2 in January, 1953, and began delivering occasional production aircraft in April, 1954, but did not throw the switch for full-scale output until late in 1955. The first delivery to an operational Air Defense Command unit took place May 1, 1956, when Lt. Col. Charles E. Rigney, commander of the 327th Fighter-Interceptor Squadron, climbed into an F-102A at Convair's Palmdale flight test center and flew it home to George Air Force Base, Victorville, Calif.

By the spring of 1956 the Air Force had awarded Convair four production contracts for F-102As. Three of the orders included TF-102As, a two-place training version. On May 30 the initial contract was announced for building F-102Bs, an improved version.

Three other delta-winged planes, each the first of its kind, were developed by Convair. These were the XF2Y-1 Sea Dart, an experimental water-based jet fighter; the XFY-1 Pogo, first airplane in the world to take off and land vertically; and the B-58 Hustler, a supersonic medium bomber.

A product of Convair's hydrodynamic research laboratory at San Diego, the twin-jet Sea Dart flew first on April 9, 1953. Its wing, triangular fin, and sharp-nosed cockpit canopy gave it a family resemblance to the F-102. The XF2Y-1's most novel feature—and the one most difficult to perfect—was a retractable hydro-ski for takeoff and landing. A double ski was used first, but this created vibration and stability problems in the flight period between takeoff and retraction. Designers switched to a broad, single ski for continuation of the tests.

Through 1956, no performance figures had been released on the four planes built to that time. However, it was announced in 1954 that the second model passed Mach 1 on August 3, while executing a shallow dive at 34,000 feet. Thus, Sea Dart became the first water-based aircraft to achieve supersonic flight.

Thanksgiving to Fall On Nov. 23 This Year

All General Dynamics Corporation people will celebrate Thankgiving Day this year on Nov. 23.

Except for departments performing essential maintenance and industrial security functions, or special production tasks, all plants will suspend work the fourth Thursday.

Work will resume as usual the next day, Friday (Nov. 24).



HUM, BOY!—Cameras didn't bother Danny Caillouet, son of GD/Astro's Joseph Caillouet, when he started to work on barbecued chicken. Danny was one of 1,000 taking part in Astro family picnic at Vandenberg AFB.

San Diego Chapter Of SAVE Forecast As Meeting Result

Formation of a San Diego chapter, Society of American Value Engineers (SAVE), may follow a meeting of the group's Southern California branch in Los Angeles tomorrow (Nov. 9).

The national organization was founded recently to enhance the stature of value engineering as a growing, functional discipline in modern industrial economics.

James N. Davis, Deputy Assistant Secretary of Defense, will address the Los Angeles meeting scheduled for 6:30 p.m. at the Institute of Aerospace Sciences, 7660 Beverly Blvd. Subject of his address is "Value Engineering and National Defense."

E. J. Williams, General Dynamics senior vice president-manufacturing, and members of his staff, J. D. Blitch, director of programming; E. W. Feddersen, director of manufacturing engineering; J. Y. McClure, director of quality control, will attend. In addition, value control personnel from General Dynamics divisions of Convair, Astronautics, Electronics, Pomona, will be present.

Instruments Group Joins Astro Division

Instruments Section of General Dynamics/Electronics producing liquid level sensors in support of Atlas and Centaur programs was integrated last month with GD/Astronautics.

Plans call for some 20 former Convair Instruments employees to move from their present Frontier St. facility into Plant 71's Bldg. 33A by mid-December. They had, more recently, been assigned to Information Technology division of GD/Electronice.

Liquid level sensor production will be administered at GD/Astro by Frank Kemper, factory manager - electronics manufacturing, reporting to Elwood Bryant, GD/Astro vice president-operations.

Scientists Lecture At Academy Meeting

Three General Atomic scientists were among experts lecturing at the 96th fall meeting of the National Academy of Sciences last week on La Jolla and Los Angeles campuses of University of California.

Mark Nelkin, Wade L. Fite, and Joe N. Smith Jr. were among 25 San Diego scientists from University of California, Scripps Clinic and Research Foundation, and General Atomic Division of General Dynamics Corporation who were chosen to present papers.

Reliability Director Will Speak in L.A.

J. Y. McClure, General Dynamics director of reliability and quality control, will be featured speaker at the National Aircraft and Missiles Conference in Los Angeles.

McClure, former manager of quality control at GD/FW, will speak on "Quality Control from Management Viewpoint."

Gifted Knife

Nature Supplies Material, Ideas For Art Expression in Wood

When General Dynamics/Astronautics photographer Tom Mahnken took up wood sculpture, he added a third dimension to accomplishments in nearly every field of the graphic arts.

Mahnken is already well known in art circles as a painter. Oils and water colors with his signature have won a number of awards, and one hangs in the permanent collection of the Norton Gallery, West Palm Beach, Fla.

On many weekends, he disappears into Baja California where he is preparing a documentary photographic series on the inhabitants of remote areas, their lives and customs.

Since adding sculpture to his hobbies, Mahnken has finished a half-dozen works. He draws his subjects from nature.

Human figures in teak and ebony, a school of mackerel and a burrowing owl in rosewood, are complete. Getting the last fine finish is a massive pair of dolphins chasing a flying fish.

First step is selection of the raw material.

"I look for unusually fine pieces of wood," Mahnken explained. "Then, these may lie around for a year or more while I choose a subject I feel suitable in terms of form and texture."

With the basic concept firmly in mind, he goes to work, roughing out a crude shape with an axe or adze, then working with progressively lighter mallets and shallower gouges.

"The image and my approach to it often change as the work goes along," he added. "In one sense, it is not so much that I 'create' an image in the wood, but rather that the subject evolves."

Mahnken takes his work to the beach in summer, where he often attracts a cluster of curious.

"Beach lighting is fine, and I get a sun tan while I work," he said.

No amateur, Mahnken received his first art training while still in elementary school, and later studied at the Art Students' League, New York, under Reginald Marsh.

His partiality for fish and animals as subjects is also the result of formal training. He holds a bachelor of science degree from Cornell University—in zoology.



TAKING SHAPE—"Flying fish pursued by dolphins" takes shape in teak slab under skilled hands of GD/Astro photographer Tom Mahnken. His favorite studio is the beach.

Four Ideas Suggested at FW To Save GD More than $9,000

Suggestions recently submitted by four General Dynamics/Fort Worth employees will mean a total of $9,172 in installed savings.

Suggesters are a saw operator, two inspectors and an electrician.

Saw operator is W. E. Sellers, Dept. 59, whose ES will mean a first year's savings of $3,385 after an installation cost of $186. Sellers, with the company 15 years, scored on his first ES, pocketing $338.50. He used the money for a special vacation trip.

Sellers suggested installing an adjustable supporting fixture in front of the Do-All saw used in sawing B-58 nacelle panels to size during fabrication. Installation reduced the operation from a two-man to a one-man job.

A joint suggestion by two Dept. 27-1 inspectors, T. L. Walker and F. X. Howe, will save $3,162 the first year. Their idea involved "minor" cost. It reduces time formerly spent in magnetic inspection of parts already certified by vendors.

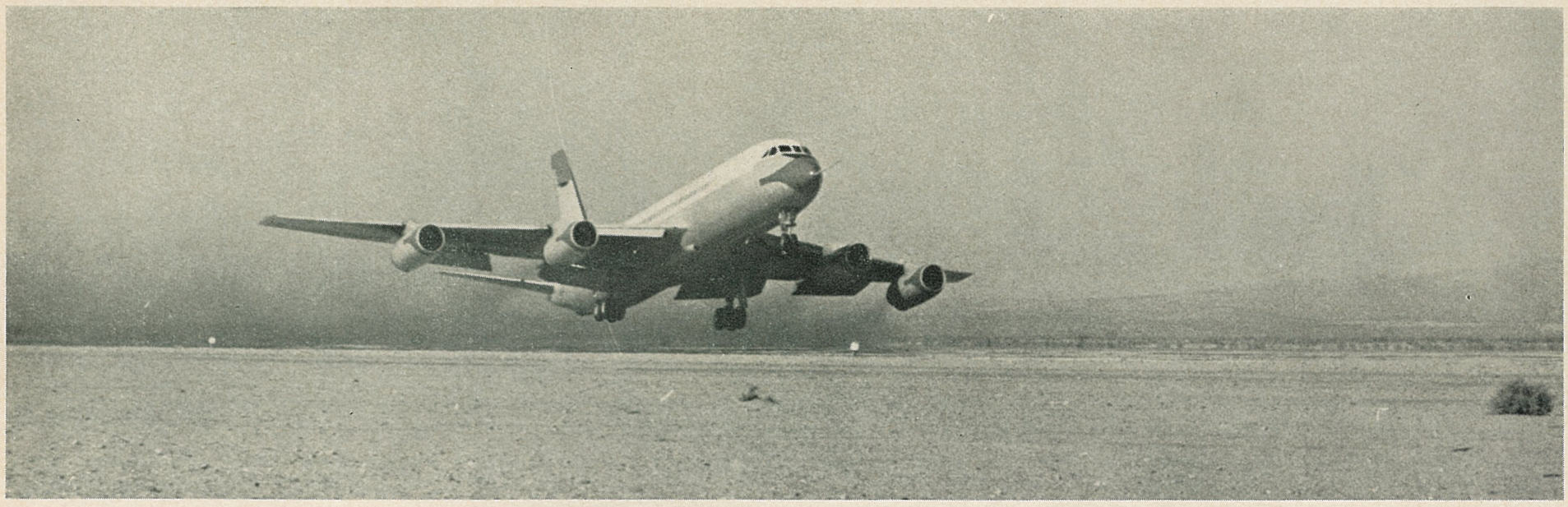
Electrician H. L. Brown, in Dept. 25-3, suggested that thermocouple wire on steam-heated platens be attached with a spring-loaded plate, rather than with paper tape, as previously. The tape system allowed damage to the wires and frequent replacement.

Brown's ES will mean $2,625 installed first year's savings after $75 installation cost.



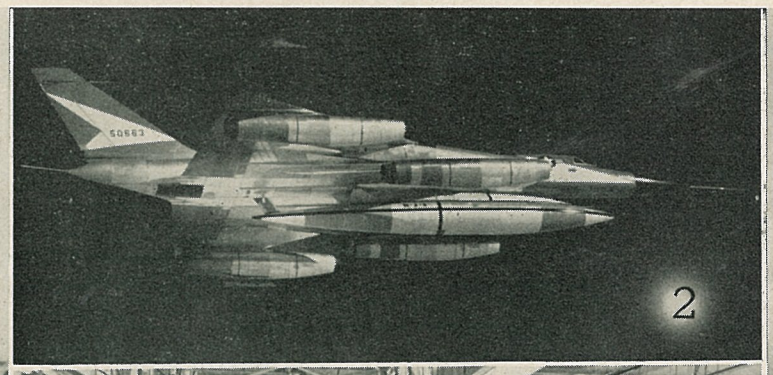
"I never thought it would lead to *this* the day I submitted that suggestion for closer employee relations."

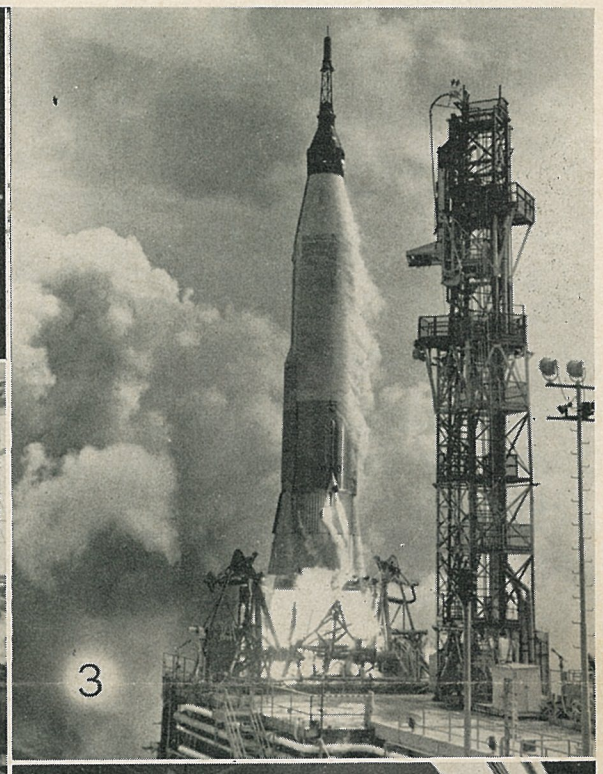
Cameras Catch Highlights From Far-Flung General Dynamics Divisions



AROUND DYNAMICS — On both coasts — and in most states in between — General Dynamics products and people make news almost daily. Above, a Convair jet 990 undergoes heavy-load takeoff at Edwards AFB, Calif., preparatory to FAA certification. Below are other highlights from Dynamics divisions.



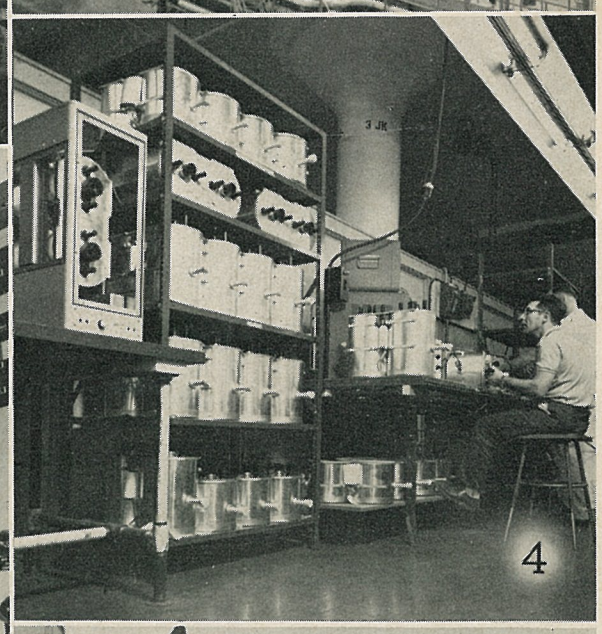




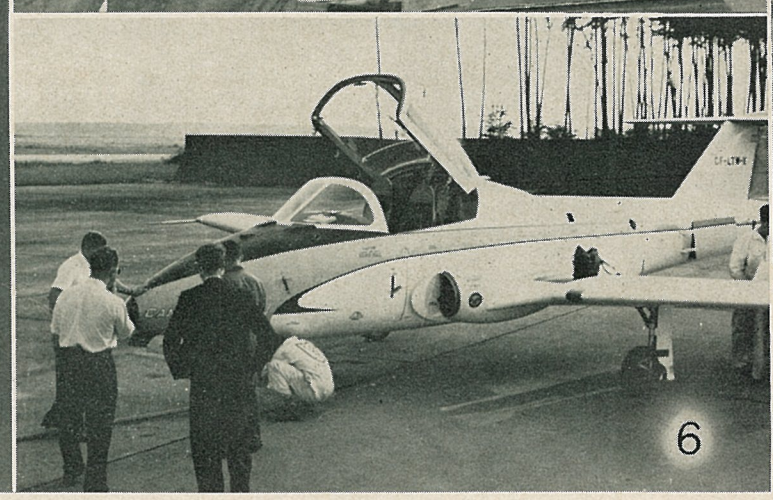














(1) General Dynamics/Pomona's new compact directional antenna, shown on Air National Guard control truck, is for ground-to-air communication with jet aircraft. It weighs only ten pounds. (2) A blur of speed is Mach 2 B-58 Hustler built by GD/Fort Worth. B-58s are on duty at Bunker Hill and Carswell AFBs. (3) GD/Astronautics' Atlas missile starts takeoff from Cape Canaveral. It was Atlas that placed Mercury spacecraft in orbit last September. (4) At GD/Electronics in Rochester, N.Y., these are not "bongo drums" but band pass filters for communication systems, built by Military Products Division, which Anthony Cucinelli is testing. (5) At San Diego, C. Rhoades MacBride, General Dynamics executive vice president, welcomes first arrivals as Delta Air Lines brings Convair 880 jet service to San Diego. (6) Home from successful sales trip abroad is Canadair Limited's CL-41 jet. RCAF has adopted ship as basic trainer. (7) On lighter side, GD/Astro's Jean Foster, stationed at Altus AFB in Oklahoma where Atlas missile sites are under construction, makes charming Halloween "witch." (8) A submarine "first" was scored by Electric Boat Division when piano was loaded aboard Polaris submarine Thomas A. Edison, now being fitted out. (9) Production lines hum at Rochester where GD/Telecommunication is turning out XY universal switches for telephone exchanges. (10) Also on lighter side, raccoon that wandered into high altitude test lab at GD/Fort Worth wound up as pet for G. A. Bearce family! For no obvious reason, Bearce boys, Mike, 12, Mitch, 11, and Don, 7, named coon "John."



GOBLINS AND GAMES—Trick or treating was done on ice skates this year during ARA-CRA Ice Skating Club's annual joint Halloween party at Iceland. A balloon race (left) was one of evening's zaniest highlights. ARA Commissioner Bud Davies (middle) dressed in tails, tux and wig, faces three "tricksters" before award presentations. Evening got off to slippery start with traditional grand march (right). Prizes went for best costumes.

Convair Golf Tournament Draws 168; Even 'Duffers' Walk Away Winners

"Mr. Average Duffer" had scores of chances to win Oct. 22 when a Convair Golf Club "Stag Day" event drew 168 participants to Circle R.

Awards in the best ball event went to Frank Gadient and Ezra Hunt with a partner's total of 57. Deadlocked at 58 were Ed Ulsund-John Pehota and Bill McColley-Bob Buchholz.

High team honors for the day fell to Joe Hickman and Helen Kielmeyer.

Blind Bogey finishers in order were Charles Hopkins, Mark Pruitt, V. E. Nagle and Jack Albright.

Hal Purnell paced the driving contest with Don Cheek and Charles Dunand close behind. V. E. Nagle came up with shortest drive.

Bob Selle dropped his ball seven feet, two inches from the pin on the 185-yard 12th hole to win the "close to pin" event.

Al Bezverkov, Tom McCubbin and Jim Ensign placed in that order in the putting contest.

Following the event golfers from both GD/Convair and GD/Astronautics took part in a buffet dinner served in the clubhouse.

Mountaineers Club Guides Rockhounds On Big Bear Jaunt

More than 50 members of ARA Rockhounds took part in the club's October field trip to Big Bear where members of the Mountaineers' Gem Club served as guides on rock-hunting sorties.

Specimens of oregonite quartz were collected, and members panned for gold at Lucky Baldwin mine and searched for arrowheads at a former Indian campsite.

Last weekend (Nov. 4-5) the group traveled to the Picacho Peak area for an overnight outing.

Classes in the use of lapidary equipment in the club's workshop are now held on Monday and Wednesday evenings. Additional registrations will be accepted at the group's meeting at 7:30 p.m., Nov. 9 in the ARA Clubhouse.

Holiday Menu Slated For GD Cafeterias

A special holiday dinner will mark Thankgiving at General Dynamics cafeterias at Convair and Astronautics divisions on Nov. 21.

Menu for the Tuesday date will be roast turkey and trimmings, said W. E. Rickman, Prophet Co. supervisor of these General Dynamics cafeterias. Price, including tax, will be $1.

Meals at both Plant 1 and 2 cafeterias of GD/Convair and at the Astronautics main plant will include turkey, dressing, cranberry sauce, whipped potatoes, giblet gravy, buttered peas, roll and butter, choice of beverage, and either pumpkin or mince pie.

QC Section to Hear Talk on Tracking

A discussion of "Missile Tracking and Payload Target Predictions" by Lewis Emmerich, GD/Astronautics project engineer, will be featured at the next meeting of the San Diego Section, American Society for Quality Control.

The group will meet Nov. 13 at the Doric Inn, 221 Scott St. (Point Loma) for a social hour at 6 p.m., dinner at 6:30 p.m., and a business session starting at 8 p.m.

Additional information and tickets are available from members of GD/Astro's quality control (Dept. 141).

Dinner-Dance Set For Dec. 9

Astronautics Recreation Association has booked the new International Room (Convention Center) of the El Cortez Hotel for its fourth annual Christmas dinner-dance set for Dec. 9.

This facility, San Diego's newest and largest, will handle a crowd of more than 1,000. Traditionally, this annual event has been "sold out" well in advance so that this year more people will be able to take part.

Optional arrangements will be available this year for the first time. Participants may take part in both dinner and dance ($3.50) or dancing only. The entree will be fried chicken with all the trimmings, plus cold ham and turkey. Dinner will be served from 8 to 9:30 p.m. Those wishing to dance only (9 to 1) may attend for $1 per person.

Tickets go on sale tomorrow (Nov. 9) at all employee services outlets and will be offered on a first-come, first-served basis.

As in the past, group reservations will be accepted with a minimum of 20 and a maximum of 50 persons. Call Dixie, ext. 600 for details.

Buster Carlson and his popular ARA Band will play for dancing. There will be entertainment at 11 p.m. Door prizes (10 fat Christmas turkeys) will also be given away.

CONVAIR GOLF CLUB SETS TURKEY MATCH

Convair Golf Club will stage a turkey shoot Nov. 18-19 at Bonita Golf Course open to members from both GD/Convair and GD/Astro.

Starting times may be reserved by calling Juanita, ext. 1158, at Astronautics.

Save Material — Don't Throw Your Job Away!

Gardeners to Gather For Movie, Prizes

A meeting at 7:30 p.m. today (Nov. 8) will add another family-participation activity to the 40-odd organizations presently sponsored by GD/Astronautics Recreation Association.

Inaugural meeting of the new GD/Astro Garden Club will be held in the Floral Building, Balboa Park, with a guest speaker, a movie, and door prizes.

All interested employees and their families have been invited to participate in the new organization, which will provide a clearinghouse for garden and lawn care information.

Archers Slate Novelty Shoot

A novelty turkey shoot, open to all archers regardless of skill or club affiliation, is planned by GD/Convair's Archery Club Nov. 12.

Competition will begin at 9:30 a.m. on Balboa Park Field range, Al Phipps, CRA commissioner, said.

Phipps said the match will be covered by Channel 10 and will be shown on Lute Mason's show, "Sports Unlimited," at 7 p.m., Nov. 22.

Using novelty scoring, 28 targets will have sealed envelopes giving individual scoring rules.

"This way everyone has a chance to win a turkey. Some scores may be determined by number of bull's-eyes hit and then some by number of times missed," Phipps said.

Entrants are asked to bring their own equipment.

Phipps said the shoot will be a warm-up for the IRC tournament slated for Dec. 10. GD/Convair's Archery Club will host.

Astronomer Meet Scheduled Tonight

An illustrated lecture on "Telescope Mirror Figuring and Testing" will be featured at a meeting of ARA Astronomy Club tonight (Nov. 8) at 7:30 p.m. in ARA Clubhouse.

Guest speaker is Clifford Nimen of Astro Research Co., La Mesa.

Harry Dempster, ARA commissioner, reports that construction of the club's observatory dome in ARA Recreation Area is now 90 per cent complete. The dome will house the club's 8-inch reflecting telescope and is expected to be in operation by the end of the year.

Paper to Describe Failure Problems

A paper "The Problems of Human Initiated Failures" by David Meister of GD/Astro will be among those presented at the forthcoming National Symposium of Reliability and Quality Control.

Eighth annual event of its kind, the symposium will be held at the Statler Hilton Hotel, Washington, D.C., Jan. 9-11, 1962.

Three ARA Football Leagues Under Way With 22 Flag Teams

Three ARA flag football leagues are now in full swing with a total of 22 teams (including units from Ryan and GD/Convair) playing Mondays, Thursdays and Saturdays.

Play will continue through November, with plant champions decided in three-way playoffs of league winners.

As of Oct. 30, Airmailers (Dept. 170-2) led the Monday league with four consecutive wins. Stores (Dept. 830) and Dispatchers (Dept. 220) both have 3-1 records; Field Test (Dept. 578), 3-2; GD/Convair's "990 Jets," 2-2; Zombies (Dept. 511-7), 1-2; Sycamore (Dept. 573), 1-4; and Cardinals (Dept. 344), three losses.

Three teams have unblemished records in the Thursday league. Servo (Dept. 556) has four wins, with Checkouts (Dept. 733) and Tigers (Dept. 771) recording three wins each. Depot (Dept. 343) has a 2-1-1, win-loss-tie record, while Ryan's "Firebees" stand at 1-1-1, and Offsiters (Dept. 220-6), 1-2-1.

Processing (Dept. 733) has lost two games and tied one, and Dynamics (Dept. 597-1) has lost four.

Four teams are taking part in the Saturday league for second shift units. Here Tooling (Dept. 451) and Comets (Dept. 250) have 3-1 records; the Barstock Bugs (Dept. 833) stand 2-2, and Photo Lab (Dept. 125) has yielded four games through forfeit.

Games are played on city park and recreation fields at University Heights, Golden Hills, and Colina. J. T. McPherson is ARA commissioner, and Manuel Gomes is umpire coordinator.

Wives' Auxiliary Will Lunch Nov. 15

Current meeting in GD/Astronautics Wives' Auxiliary's series of monthly luncheons will be Nov. 15 at Islandia Restaurant, Mission Bay.

A social hour will begin at 11:30 a.m., with luncheon at 12:30 p.m. A discussion of Christmas decorations will be featured. All interested GD/Astro wives have been invited to make reservations by calling Mrs. Jack Harper, BR-3-4463, or Mrs. Harry Tooley, BR-3-4959.

The Wives' Auxiliary has begun a golf program by sponsoring lessons during November at Singing Hills course. The links is also open at 9:30 a.m., Fridays, for wives who wish to establish handicaps for the group's December tournament.

Three rounds of play, or three score cards from any course, will be required. Tournament entries will be accepted through Nov. 27 by Jean Withrow, HU-8-5098, or Lee Baebler, BR-3-9343.

Baseball Workouts Scheduled Nov. 12

A varsity baseball team to represent ARA in San Diego municipal winter league play will be organized during a trial workout from 1 to 3 p.m., Nov. 12, at Pacific Beach Youth Field.

All GD/Astro employees with school or other baseball experience have been invited to try out for the team, which will be managed by Don Sanchez.

Municipal league play will consist of a 12-week, 12-game schedule with play slated for Sunday afternoons. Additional information on GD/Astro's participation is available from Sanchez, Plant 2, ext. 624 or 628.

Geopfarth Shades Pistol Contenders

Two .22 matches concluded October activities of ARA Pistol Club with Bill Geopfarth, ARA commissioner, leading contenders in both events.

Geopfarth's 287 topped a 285 by Ronnie Legg for master class shooters in the Camp Perry Police Course match, while Don Smock with 282 and A. B. Carlson with 280 took expert honors.

Sharpshooters Margaret Slater (272) and Mort Williams (271) led their class, while Myron Clapper fired 264 and George Slater, 248, among the marksmen.

Geopfarth led the .22 Short National match with 279, followed by Roland Schneider's 276.

Schilling Engineer To Marry Nov. 25

SCHILLING AFB — The wedding of Robert Travillian, industrial engineering (Dept. 615-3) here, and Mary Jo Kinsey will take place Nov. 25 the bride's home city of Ann Arbor, Mich.

Following a honeymoon in Miami, Fla., they will make their home in Salina.

Louis Armstrong Tickets on Sale

Reduced-price tickets for the 5 p.m. performance of Louis Armstrong and his "All Stars," Nov. 19 at Circle Arts Theatre, are on sale at all GD/Astronautics employee services outlets.

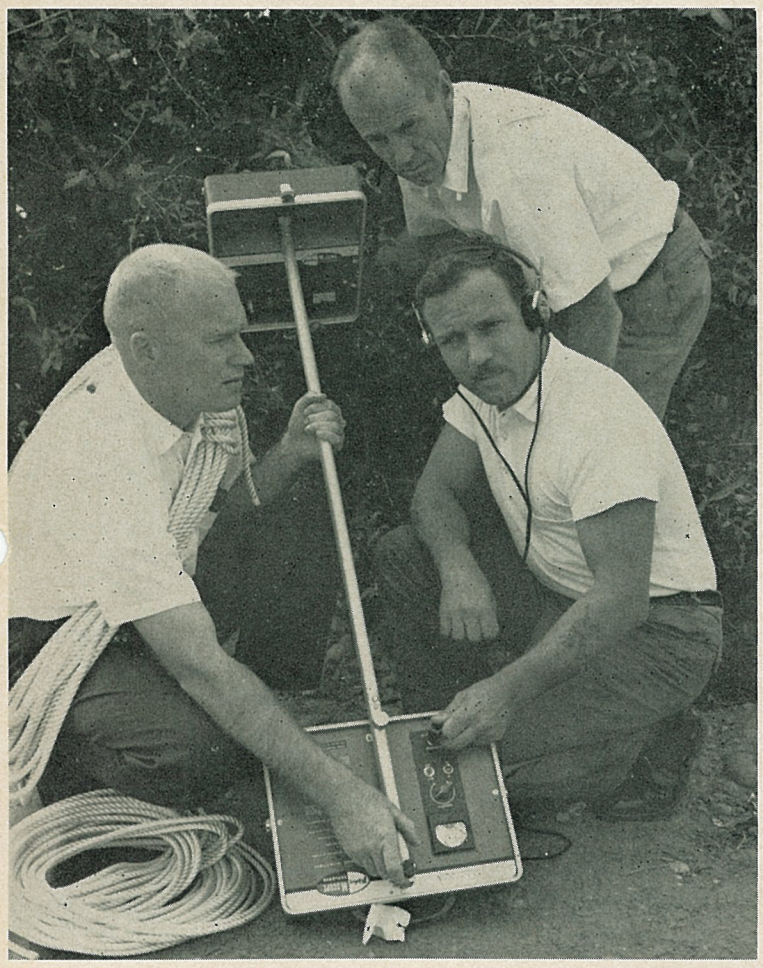
Tickets normally selling for $3.75 are available to GD/Astro employees at $3. The 500 tickets obtained for the two-hour Sunday evening concert will be sold on a first-come, first-served basis.

Mgt. Club Linksmen Plan Dec. 9 Tourney

Astronautics Management Club will stage its second annual golf tournament Dec. 9 at Bonita Valley Country Club.

Three flights are slated with a field of 130 golfers expected. Jack Abels Jr. is defending champion. Bulletins to all club members will be distributed soon with information on registering.

Members wishing to reserve electric carts are asked to call GR-4-6749.



SEARCH PARTY—Larry Beaver, ARA commissioner, and ARA Explorers' Club officers Don Norton and Paul DuPre use club electronic metal detector. Device, like nylon climbing rope, is used on field trips.

Broad Scope

Activities of Explorers' Club Geared to Attract Families

Astro Explorers' Club, a new addition to the 40-odd ARA activities at GD/Astro, is designed for those who combine a love of the outdoors with an insatiable curiosity about their environment.

Club operation began six months ago and more than 30 members are now in its ranks. Like other ARA organizations, it is open to all GD/Astro employees and members of their families.

Club activities are geared to permit entire families to take part. Business meetings held the third Thursday of each month at 7:30 p.m. in ARA Clubhouse, attract visiting experts in fields ranging from mountain climbing to zoology. The next is slated for Nov. 16.

In addition, field trips are held at least once monthly and include both one-day outings and weekend camping expeditions. These are always carefully planned to suit the member who enjoys a quiet stroll, as well as the adventurous who prefer more rugged activity.

While most trips are directed at desert or mountain areas in the San Diego vicinity, some weekend jaunts have led the group into remote areas of Baja California.

Members often use Explorers' Club trips to pursue personal interests including skin diving, photography and biology. Members with a flair for archaeology have made frequent "finds," and have turned over a number of relics to scientific organizations for further study.

To date, the group has acquired an electronic metal detector, nylon climbing ropes, compasses, and a variety of camping equipment for club use. More equipment will be added as the group grows.

There is no charge for participation in Explorers' Club activities. However, annual dues of $3 are collected from "voting members" who may check out club equipment for personal use, and are eligible for prizes in club contests.

Larry Beaver is ARA commissioner, and current Explorers' Club officers include Jack Estlick, president; Don Norton, vice president; Paul DuPre, secretary; John Stangle, treasurer; and Del Gerbaz, excursion chairman.

Additional information on the club and its activities is available from ARA Headquarters, ext. 1111.

Fair Sex Attracted To Class in Judo

Men have no corner on the fun when it comes to judo, an ARA-sponsored activity which is quickly rising in popularity among GD/Astro employees.

A judo class now taught by Mary Gengler, Dept. 105, meets from 7 to 8 p.m. Thursdays in ARA Clubhouse. Present students are Mrs. Anne Besse, and her daughters Mrs. Carol Brean and Gale (Dept. 145); Judy Kaiser and Sue Solomon, Dept. 195.

Their instructor holds the "Nikyu" (second degree brown belt) rating and has studied judo for four years.

Judo activities at GD/Astro are the outgrowth of interest developed through ARA Physical Culture Club. Clyde Burkhart is ARA commissioner of this organization.

130 Square Dancers Flock to Jamboree

Over 130 square dancers from GD/Astro, GD/Pomona and GD/Convair converged on San Diego recently for the All-General Dynamics Hoedown-Jamboree.

Hosted by Convair's Hoedowners, 20 squares were formed.

CRA Commissioner Maury Scholz joined ARA and PRA Commissioners Marty Stutz and John Warren for introductions of club officers and then the three led the Grand March.

Don Browne, caller for Hoedowners, served as master of ceremonies for a program which featured 10 callers.

Next All-General Dynamics Hoedown-Jamboree will be hosted by GD/Astro in San Diego.

Coineers Will Swap At Nov. 15 Session

A "swap session" will be featured at ARA Coineers meeting at 7:30 p.m., Nov. 15 in ARA Clubhouse.

Club members have been asked to bring coins they wish to trade, and "open class displays" for exhibit. A coin auction will also be held. Members attending will be given a United States coin in uncirculated condition.

ARA Calendar

(GD/Astronautics Recreation Association has some 40 activities in operation for employees and their families. For information, call ARA Headquarters, ext. 1111.)

★ ★ ★

ASTRO DIVERS — Spearfishing contest, nine until noon, Nov. 12, La Jolla Casa pool.

ASTRO LENS—Final quarterly contest during meeting at 7:30 p.m., Nov. 19, Photo Arts Bldg., Balboa Park. Black and white, color entries, accepted from all members.

ASTRO NOTES—Meetings and rehearsals every Monday, 7:30 p.m., ARA Clubhouse. New members in all voice ranges needed.

ASTRONOMY — Meeting 7:30 p.m., today, Nov. 8, ARA Clubhouse. Program subject is "Telescope Mirror Figuring and Testing."

BASEBALL — Representative team to enter municipal league to be organized during tryouts, 1-3 p.m., Nov. 12, Pacific Beach Youth Field.

COINEERS — Meeting 7:30 p.m., Nov. 15, ARA Clubhouse.

EXPLORERS — Meeting 7:30 p.m., Nov. 16, ARA Clubhouse.

GARDEN CLUB—First meeting today (Nov. 8), 7:30 p.m., Floral Bldg., Balboa Park. All employees welcome.

REDUCED PRICE TICKETS—Seats for Circle Arts Theatre's 5 p.m., Nov. 19 show featuring Louis Armstrong, now available for $3 at all employee services outlets.

ROCKHOUNDS—Meeting 7:30 p.m., Nov. 9, ARA Clubhouse.

WIVES' AUXILIARY—Luncheon at Islandia, Nov. 15. Social hour 11:30 a.m., luncheon, 12:30 p.m. Wives golf tournament begins Dec. 1.

New Golf Club Will Be Formed

A new Astronautics Golf Club will be organized for 1962 if at least 100 members can be registered by Nov. 20.

Plans for the GD/Astro organization were announced this week, when it was disclosed that the present Convair Golf Club (which included both GD/Convair and GD/Astro employees) would be dissolved.

Formation of the Astro club will take place at two general meetings in Astronautics cafeteria at 3:45 and 5 p.m., Monday (Nov. 13). Proposed membership dues of $10 per person may be paid at one of these meetings, or not later than the Nov. 20 deadline.

Should fewer than 100 persons express interest in the new organization, all dues collected will be returned.

Additional information and membership applications may be obtained from Mac McCord (ext. 3183), Dick Tobias (ext. 1632), and the employee services office (ext. 600) at Plant 71; from Hal Napier (ext. 376) at Plant 2; and from Gene Petzen (ext. 20) at Sycamore Canyon Test Site.

Night Trap Shooting Set By CRA Gun Club

Trap-shooting enthusiasts will have added opportunity to test their skills when the Convair-Astro Gun Club opens Gillespie Field range for night shooting tonight (Nov. 8) from 7 to 9 p.m.

Jack Swank, CRA commissioner, said the Gillespie range will be available for night firing every Wednesday hereafter.

Using six powerful spotlights, Swank said the experience is "entirely different" from normal day shooting.

"When you hit the target each shattered piece can be seen against the darkness."

Swank commented that "unfortunately, we'll have to confine night exercises to traps until problems are worked out for skeet shooting."

Sports & Recreation



RECREATION LEADER—Jack Boyle, ARA president, presents Gil Hutter with desk set during ceremony marking him as ARA "Man-of-the-Year." Award is presented annually to ARA Employees' Council member selected as contributing most to recreation program.

Gil Hutter Proclaimed Recreation 'Man of Year'

Gil Hutter has been honored as Astronautics Recreation Association's "Man of the Year" for 1960-61.

The honor is bestowed each year on the person ARA Employees' Council feels has done the most for recreation at Astronautics during the past year.

Presentation came last month at a dinner held jointly by ARA's Employees' Council and Women's Activities Council. Special guests included council members' immediate supervisors and wives.

The event was held at Aztec Steak House and included entertainment by Astro Players and a dance.

Hutter, manager of Prophet Co. cafeteria at Astro and a charter council member of ARA, was cited for his overall assistance. Special recognition was paid his work with the Teen Club and also his job as co-chairman of the Western Days celebration which drew 27,000 people to the opening of the ARA recreation area. Hutter received a desk plaque from ARA President Jack Boyle.

Also honored were Joe Frivaldsky, last year's ARA president, and Elaine Jorgenson, departing president of the Women's Activities Council. Each received an engraved watch from J. R. Mitchell, chief of employee services. Also presented watches were Art Munson and former WAC Presidents Jean Bryan and Jean Kunde.

Ross Evans, Astro's manager of personnel administration, spoke briefly and lauded the efforts of all Council members.

Spearfish Contest Set for Casa Pool

ARA Astro Divers will feature a spearfishing contest at La Jolla Casa pool Sunday (Nov. 12) with a trophy going to the diver who spears the greatest weight of edible fish.

The contest will run from 9 a.m. until noon, and a minimum weight of two pounds per fish has been established. Following the underwater event, a drawing will determine which club member receives Astro Divers' Thanksgiving turkey.

Travelers Weekend In Hulburd Grove

Astro Travelers, ARA trailer club, featured a weekend at Hulburd Grove near Descanso at their October outing, with 13 trailers and 55 club members moving into the camp area.

Member Wiley Clark served pancakes to the crowd both Saturday and Sunday mornings, while Saturday evening's menu was based on the club's traditional "potluck." Movies of their northern California vacation were shown by Virgil and Helen Marshall.

The club plans a trip to the desert during November.

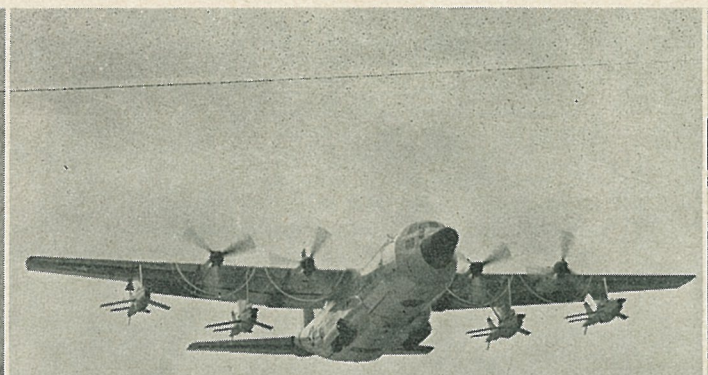
TRAVELERS JOIN IN ANNIVERSARY

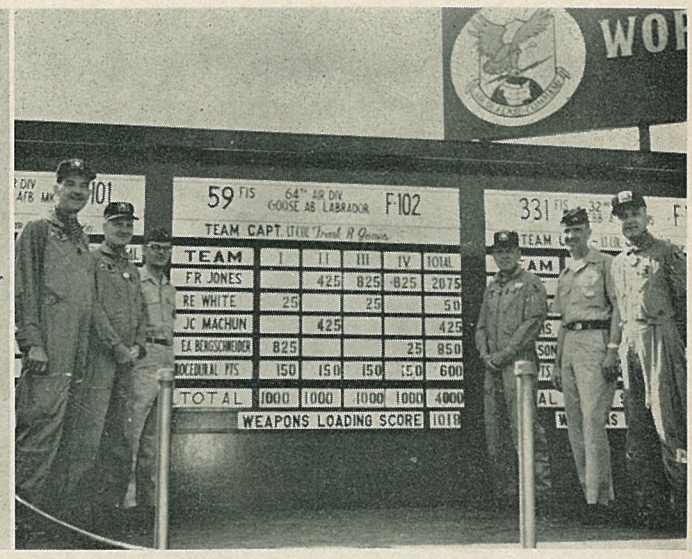
Astro Travelers, ARA trailer club, last month observed the 25th wedding anniversary of members Rose and Gus Morris (Dept. 451) with a social evening at their Ocean Beach home.



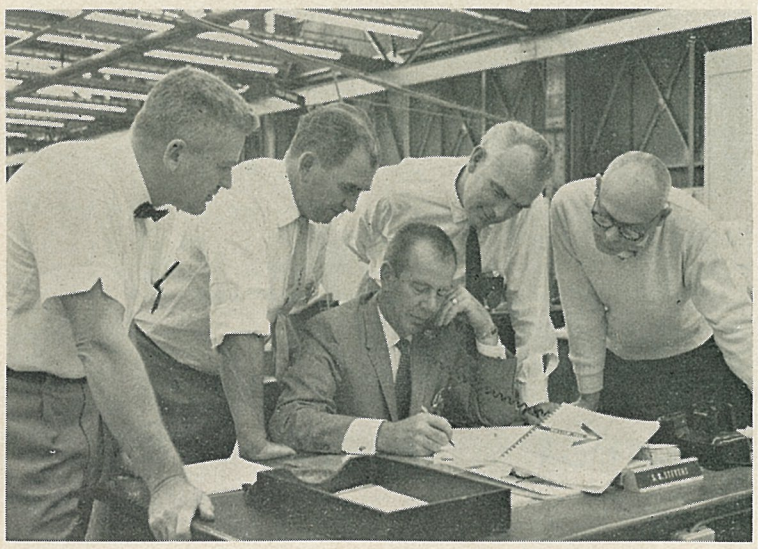
PREXY PARADE—At annual dinner honoring GD/Astro's ARA, past presidents of both men's and women's Employees' Councils were presented watches. Shown from left are Jean Kunde, Jean Bryan, Art Munson, Art King and Joe Frivaldsky. Missing is Elaine Jorgenson, third Women's Council president.







SHARPSHOOTERS—At far right is championship interceptor team from 59th FIS, Goose Air Base, Labrador, who flew Convair-built F-102 for first perfect score in William Tell weapon meet, Tyndall AFB, Fla. Top F-102 crew and overall meet winners are (from left) Lt. Col. Frank R. Jones, team captain; Capt. Ethan Bergschneider; Lt. John R. Osborne; Capt. Richard E. White; Capt. Manford C. Holly Jr.; and Capt. John C. Machun. Capt. Holly and Lt. Osborne were team alternates. Center shot shows GC-130 craft carrying four Ryan Q2C "Firebee" drones to firing range. At left, jet drone is plucked from Gulf of Mexico by helicopter.



ON THE WIRE—Sam Stevens of GD/Convair interceptor service engineering grabs phone at SD to take down daily report on F-102 and F-106 performance at William Tell called in by GD/Convair reps at Florida site. Gathering around to hear results are (from left) E. C. Palmer, S. L. Nichols, W. W. Fenton, D. F. Houtz.

Labrador F-102 Team Wins William Tell With Perfect Score

An F-102 team from Labrador roared into top spot as overall winner of William Tell 1961 for the only perfect missile firing score in the USAF interceptor weapons meet at Tyndall AFB, Fla.

Pilots from 59th Fighter-Interceptor Squadron, Goose Bay, flying Convair-built F-102s, scored four perfect 1,000-point missions, including three jet targets destroyed with dead-center missile hits to take championship of Category II. Team captain, Lt. Col. Frank R. Jones, led his men as top individual William Tell sharpshooter with three perfect missions and two dead drones.

Perfect weather in the 10-day meet, calendared from Oct. 23-Nov. 3, saw all 13 top interceptor teams in three classes, F-102s, F-106s, McDonnell F-101s, completing all of their missions in six days.

Team from 456th FIS of Castle AFB, Merced, Calif., led the field in Category III, or F-106, competition. Team captain was Lt. Col. James L. Price.

Other team standings on the weapons meet scoreboard in F-102 category were: second, 182nd Air National Guard, Kelly AFB, Texas; third, 317th FIS, Elmendorf AFB, Alaska; fourth, 3558th FTS, Perrin AFB, Texas; 331st FIS, Webb AFB, Texas.

F-106 teams stood: second, 498th FIS, Spokane, Wash.; third, 539th FIS, McGuire AFB, N.J.; fourth, 11th FIS, Duluth, Minn.

Top F-102, F-106 teams and winner of the F-101 category (456th FIS, Wurtsmith, Mich.) had their names added to the permanent Richard I. Bong trophy, named for the World War II ace, which remains at the Air Defense Command's Weapon Center. Each team received exact replicas.

J. H. Famme, General Dynamics/Convair vice president and general manager, flew to the Florida weapons center to present Convair trophies to winning F-102 and F-106 teams at last Thursday's ceremonies.

This was the first year that F-106s had scrambled in the Air Defense Command's meet, held every other year to test efficiency of defense fighter weapon systems in combat conditions. Convair F-102s first took active part in 1958.

Teams in each interceptor category scrambled into action this year under realistic combat conditions against an "invading" force of radio-controlled jet drone targets.

The drones, Ryan Q2C Firebees made in San Diego, were launched from ground and air to provide aerial bull's-eyes. They carried electronic equipment to record and transmit "area hit" scores. Judges also monitored conduct of each mission by television broadcasts from cameras aboard chase planes.

F-102s, firing Hughes Aircraft GAR (Guided Air Rocket) missiles, and F-106s, equipped with both Hughes' GAR Super Falcons and Douglas Aircraft Co.'s MB-1 Genie nuclear rockets, were pitted against the 600 mph drones in low, high, and very high altitude missions, both day and night.

Scoring was more complex than just hitting or nearly hitting a target. Fighter crews won or lost points on such procedures as time required to "scramble," voice, firing, recovery, and off-target maneuvers.

According to GD/Convair reps on the spot, F-102s and F-106s came through the strenuous exercises in good commission with only minor discrepancies.

GD/Electronics Barge Will Do ASW Research

ROCHESTER, N. Y.—A self-propelled barge, equipped for anti-submarine research and designed as a floating General Dynamics/Electronics test facility, is en route from Florida and will be stationed on Lake Seneca, 50 miles southeast of here.

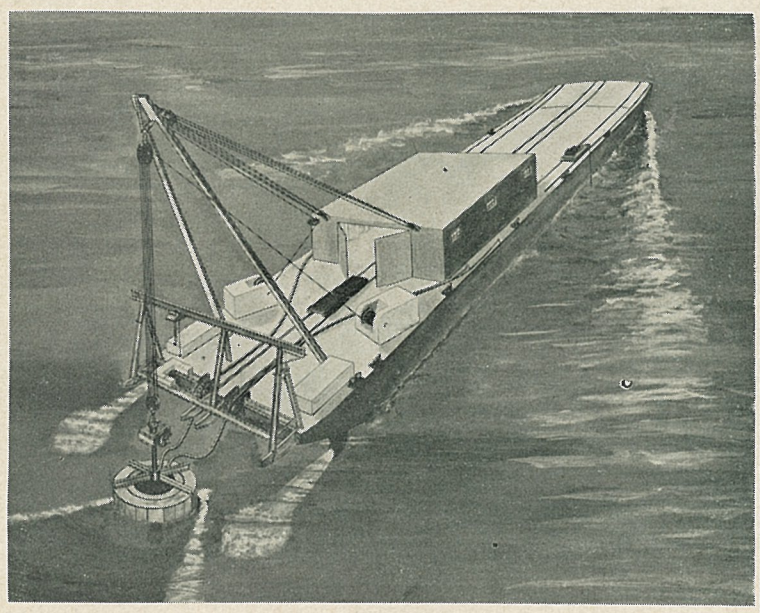
Harry B. Miller, manager of advanced development, Electro-Acoustics Laboratory of GD/Electronics' Military Products division, viewed the new facility as a significant addition to ASW research and development efforts.

For most operations the barge will have a crew of three, under Miller's direction. They are Leonard Robinson, principal engineer; Robert Jensen, electronic technician; and Edwin Knapp, barge operator.

The barge will operate from 180 feet of lake frontage, leased for the purpose. Seneca is one of the scenic Finger Lakes. It is about 40 miles long and three miles wide at its broadest point. It was chosen for its depth (600 feet, by far the deepest of any U. S. lake other than the Great Lakes) and thermal gradients that are similar to those in large areas of the Atlantic Ocean. The lake rarely freezes over and waves will never be high enough to interfere with barge operations.

The barge, a converted oil tanker 165 feet long and 36 feet wide, was outfitted in Miami, Fla., under supervision of Electric Boat Division of General Dynamics. It is self-propelled by twin underwater "Hydrojets" which give it a top speed of 8 knots. It is equipped with a diesel-driven 200-kilowatt generator to power electronic equipment. This ultimately will be raised to 400-kilowatts, providing power for even the largest sonar transducers.

The barge is moving up the Atlantic coast (probably using the inland waterway) and will cruise up the Hudson River, reaching Seneca Lake via the Barge Canal.



HEADING NORTH—This is artist's conception of research barge presently en route to Seneca Lake near Rochester, N.Y., where it will be used for anti-submarine test purposes by General Dynamics/Electronics.

Texas Students See Daingerfield

Daingerfield Division of General Dynamics/Pomona was host Oct. 23 to approximately 30 senior engineering students and faculty members from University of Texas in Austin.

Students and faculty members were escorted on a tour of the facility by Daingerfield employees who are engineering graduates of the university. Escorts included: H. D. Roye, J. R. Nazzal, J. A. Cawthorn, J. D. Menefee, J. E. Hawkins and Paul Matkin, all of the jet engine department. Matkin was in charge of the tour.

The visit to Daingerfield is an annual affair. Faculty member in charge of the visiting group was Prof. Robert N. Austin.

ELECTROFORMING TOPIC FOR TALK

J. C. Ladd, General Dynamics/Fort Worth manufacturing research engineer, recently addressed the North Texas Chapter, American Society of Tooling and Manufacturing Engineers. His subject was "Born-to-Shape Parts and Tools by Electroforming."

New 'Roll-Out' Box Designed For Stabilizer

A box, at least a story-and-a-half high, that can be opened in a matter of minutes, has been designed and built in General Dynamics/Convair shipping department, for Convair 880/990 vertical stabilizers.

Dreaming up unusual packaging ideas to fit and protect fragile aircraft parts is the job of J. J. Janssen, Dept. 14 packaging specialist at Rose Canyon Warehouse.

His concept of a container which can be rolled away from its contents is unique in the packaging business. This appeared to be the only kind practicable for the huge stabilizer—26 feet from tip to tip and 10 feet across the widest part.

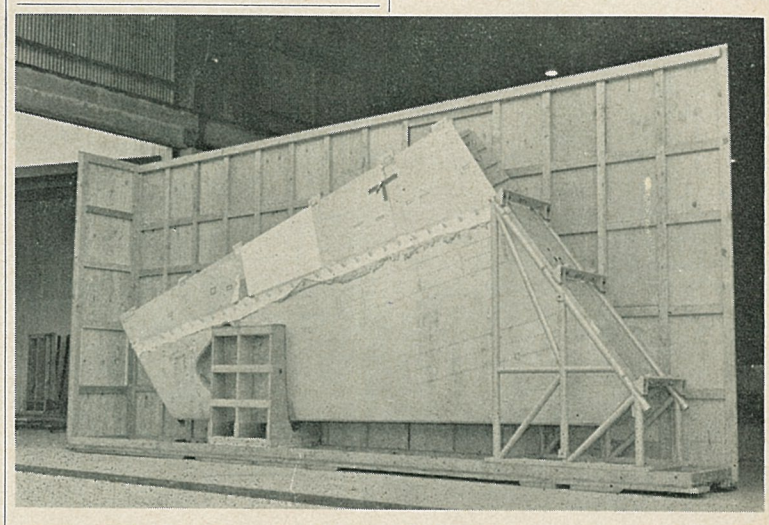
The box, 14 ft. high by 29 ft. long by 4 ft. wide, is movable on its own wheels. One open end can be unbolted in a few minutes; the entire wooden structure rolled away, leaving the stabilizer standing clear in its inner fixtures bolted to a solid base.

The stabilizer can be uncrated entirely and ready for installation on a Convair jet transport in less than half an hour!

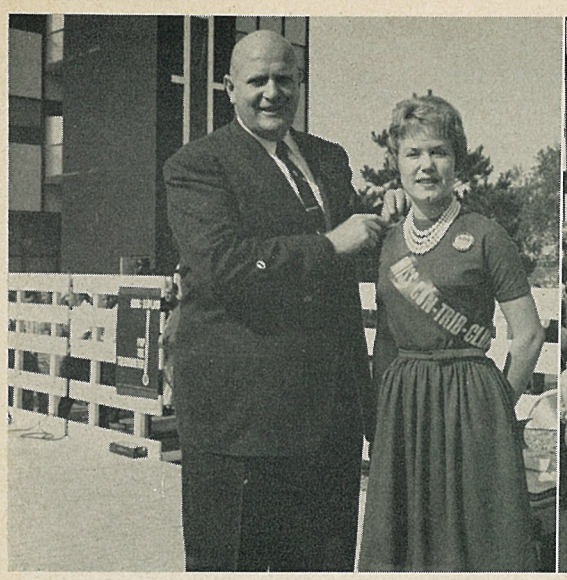
"This, in itself, means money in the pocket of the customer airline," said John Stoffel, shipping foreman. "Every minute counts when a plane is grounded for a part replacement. For instance, it could cost as much as $5 a minute for a plane to be out of service. By cutting an hour off uncrating time, we can save a customer several hundred dollars."

The container serves a double purpose. It also can be used for shipment of the damaged part to an overhaul base. The inner fixtures—one of steel and the other, a wood and steel cradle—will be returned to GD/Convair for use in future shipments.

John Wood and Walt Ahrens, packaging draftsmen in shipping, were responsible for engineering the vertical stabilizer container to Air Transport Association regulations. The container is sturdy enough to travel by any type of surface transportation—boat, rail, or truck.



PERFECT FIT—Convair 880 vertical stabilizer rests on solid fixtures within sections of new-type container, designed especially to stabilizer's 26x10-ft. dimensions.







COME ONE, COME ALL—Drums boomed, whistles blew and trumpets blared as call went out to meet $504,000 Employees' Con-Trib-Club campaign goal at lunch-hour rally. Con-Trib's brand of "carnival" featured snappy routines of "Chargettes" with safety engineer turned clown, Larry "Dutch" Miller (right), "jivings" of Dixieland Jivers and crowning of Carolyn Merriam by Frank Burkhouse (left) as "Miss Con-Trib-Club." Unveiling of "Hong Kong Gong," a five foot oriental gong which departments realizing their fund goal can ring, capped day's activities. Drive winds up this Friday.

GENERAL DYNAMICS

NEWS

ASTRONAUTICS EDITION

Vol. 14, No. 24 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, November 22, 1961

Blood Supply Dips, Volunteer Donors Needed

General Dynamics/Astronautics' credit with the San Diego Blood Bank is critically low this week as solicitations begin for voluntary donors to turn out for a Nov. 30 bloodmobile visit to the main plant.

Less than a dozen pints of blood remain available at a period when demands for blood are normally highest.

Operations departments are being asked to provide donors for the bloodmobile visit set for Bldg. 5 mockup conference room. Donor hours will be from 10 a.m. to 2 p.m. Frank Robbins will coordinate departmental efforts.

Under normal conditions, Astronautics needs from 45 to 50 pints of blood each month to meet emergency employee needs. Quarterly bloodmobile visits provide a necessary reserve. Last July engineering donors gave 208 pints. A scheduled bloodmobile visit in October was delayed until November by mutual arrangements within local General Dynamics divisions.

If 200 pints of blood can be obtained at this visit, the supply will be adequate until the next quarterly visit.

Blood received from volunteers is credited to GD/Astro's account. It is available to employees and their dependents without charge for the blood itself.

Questions concerning the blood program may be directed to Jerry Schultz, employee services representative, at ext. 2658.

Bargain Xmas Trees Coming

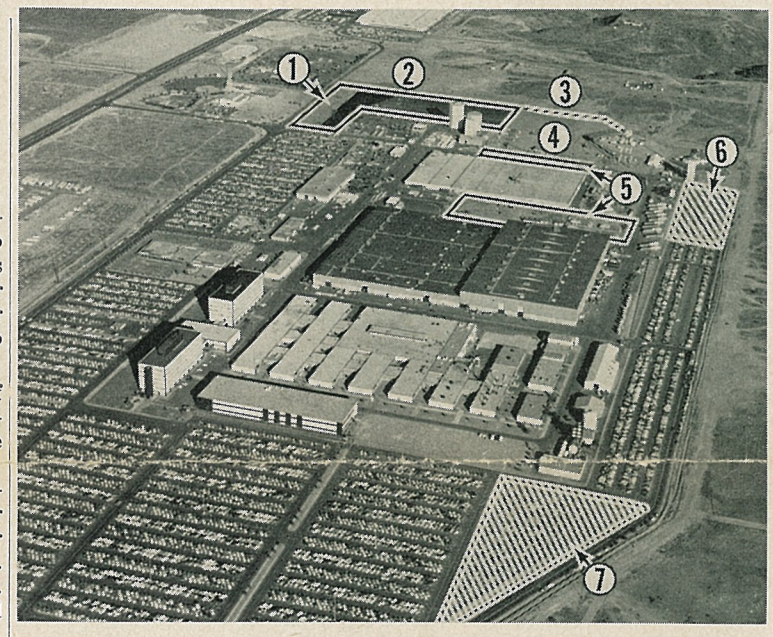
Bargain-rate Christmas trees again will be available to both GD/Convair and GD/Astro employees this season.

Sales begin Friday, Dec. 8, and continue through Wednesday, Dec. 20, between 10 a.m. and 9 p.m.

Prophet Co. will operate the sales lot at Convair CRA Clubhouse on the east side of Pacific Highway opposite Convair's employment office at Plant 1. Parking lots are open to tree shoppers after normal shift hours.

This year 800 prime farm-grown trees from Washington state will be available. Prices are from 79 cents to $4.25.

One-day service is offered those desiring painted trees, although orders must be placed at the lot.



KEY POINTS—Arrow (1) indicates widened road in anticipation of increased materials building traffic. (2) Parking lot slated for December opening. (3) New security fence. (4) Storage area. (5) Storage area paving. (6) and (7) Newly completed parking lots.

1,320-Car Parking Lot Will Be Opened in Dec.

Expansion of the fence-enclosed area at General Dynamics/Astronautics main plant by 338,000 sq. ft. will coincide with completion of the new 1,320-car east parking lot in early December.

The expanded area, designated as a missile and miscellaneous materials storage yard, is directly south of GD/Astro's silo mockup and the southern boundary of the new parking lot. A temporary fence extending parallel with the lot's western side has already provided some additional area.

In the near future, a permanent fence will be built farther east to define the ultimate outlines of the storage area.

Site of the new yard was formerly a rough, eroded area, which has been filled with earth from the Bldg. 33A excavation, and graded.

Here miscellaneous materials now stored in the small yards south of Bldg. 33 will be located.

In another move to improve missile storage facilities, paving is under way on both east and west sides of Bldg. 33A. An east-side area of 42,750 sq. ft. is nearly complete, and a major 120,000-sq. ft. area on the building's west side will be finished shortly.

Outside the security enclosure, considerable work in paving parking areas has been done in recent months. Both a triangular area at the plant's southwest corner and a rectangular lot at the southeast corner were recently placed in use.

Work on the 250,000-sq. ft. east lot is progressing ahead of schedule with some parking lines already painted and installation of 18 double-light poles in progress.

Work is under direction of GD/Astro's plant engineering (Dept. 250-2).

Dinner-Dance Ticket Sales Move Briskly

In just three days, more than half of the available tickets to ARA's fourth annual Christmas dinner-dance were sold.

The affair is set for Dec. 9 at El Cortez Hotel's International Room with 1,000 tickets available on a first-come, first-served basis. Remaining tickets are being offered by employee services outlets.

This year $3.50 per person covers both dinner and dancing. Or dancing only tickets are offered for $1 each.

Dinner will be served from 8 to 9:30 p.m. Dancing begins at 9 p.m. and continues until 1 a.m. Entertainment will be presented at 11 p.m. and door prizes (10 turkeys) given away.

Group reservations for parties of 20 to 50 persons are being accepted by Dixie, ext. 600.

Con-Trib-Club Campaign Off To Fast Start

Early returns in the current General Dynamics/Astronautics Employees' Con-Trib-Club membership drive indicate that twin goals set for the campaign are well within reach.

In the initial three days of the campaign only nine per cent (about 1,800) of the total drive cards distributed (21,000) had been returned for tabulation. However, within this group were dollar pledges totaling $81,659 or roughly 13 per cent of the total dollar goal.

This year the drive is attempting to attain dollar pledges totaling $504,000 as well as an overall membership of over 92 per cent.

The drive got under way with much fanfare on Nov. 10. It ends Friday (Nov. 24).

While this effort is extending to all Astronautics' operations, dollar goals (and returns) indicated here are for the immediate San Diego area only. Off-site bases are setting their own dollar goals and conducting their own campaigns to coincide with the San Diego drive.

Tab cards have been prepared for every Astronautics employee. They have or are being distributed to individuals through the efforts of several hundred volunteers representing all departments. The official close of the campaign will not be possible until every tab card has been accounted for.

Suggested this year to both members and non-members is the "fair share" method of giving. This is recommended weekly or bi-weekly deduction in line with individual income.

Two big rallies kicked off the campaign. On Nov. 10 at the main plant the entire lunch period was devoted to a rally. On hand were a "Miss Con-Trib-Club 1961" (Carolyn Merriam of Dept. 600) and also a "Miss Charger" (Ingrid Leyrer of Dept. 500), along with dancing Chargettes, Buster Carlson and his ARA Band, a Dixieland musical group, visiting Marine-Navy footballers and a host of visitors. A second rally was held the following week at Plant 2.

Two "gimmicks" of the drive will constantly remind employees of the effort. One is a giant thermometer extending up the entire east wall of Bldg. 3's outside elevator. A huge red line will be raised upward toward the $504,000 goal as departments report results of their effort. In addition, a "Hong Kong Gong" is positioned in the same area. Departments attaining dollar goals set for them this year will be invited to turn out at lunch periods to beat the gong.

J. R. Dempsey, Astronautics president, is drive chairman.

One of the key factors involved in both membership and dollar goals is a potential pledge to the current United Fund of San Diego County drive also in progress. To assist 97 agencies seriously in need of funds, Con-Trib-Club will allocate $384,000 to United Fund, if the goal is reached. This is considered Astro's "fair share" of the $4.6 million Fund goal.

In addition, $70,000 will be given to charities outside United Fund and $50,000 retained for Con-Trib's Emergency Aid Fund.

★ ★ ★

N. A. Nicholson, a Northrop employee assigned to GD/Astronautics on the PACE program, was an unexpected contributor to the current Con-Trib-Club drive. At his own plant Nicholson contributes to a similar program, but felt he owed support to local charities due to his duty here. He wrote out a check for a cash donation!

Von Braun to Speak For Mgt. Club Mon.

Dr. Wernher von Braun, noted scientist and rocket expert, will appear before the General Dynamics/Astronautics Management Club at its Nov. 27 meeting at International Room, El Cortez Hotel.

He will speak on "The How and Why of Outer Space."

Dr. von Braun is director of National Aeronautics and Space Administration's George C. Marshall Space Flight Center, Huntsville, Ala.

Tickets are on sale through normal outlets, but will not be available after Nov. 24 (Friday).

Industrial relations department is sponsoring the meeting.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Nov. 6.

Dept. 100-0, Manager's Office: To asst. program director-Atlas, R. W. Keehn, J. M. Rogers.

Dept. 101-1, Data Processing: To data processing supervisor, A. N. Hubbs, H. B. Smith.

Dept. 141-4, Quality Control: To asst. supervisor, J. D. Stevens.

Dept. 170-1, Organization and Systems: To organization and systems general supervisor, C. V. Gibbs, Ward Soule. To organization and systems supervisor, C. D. Brown, F. J. Gosselin, O. S. Hall, R. E. Harmon, J. R. Mackley, C. L. VanDeusen, Conrad Wronski. To work measurement supervisor, J. L. Reich.

Dept. 200-0, Operations: To manager of operations control, F. D. Robbins.

Dept. 220, Manufacturing Control: To manufacturing control asst. supervisor, F. L. Maxwell, R. C. Thomas.

Dept. 305-0, Support Administration: To support task control supervisor, P. R. Bull.

Dept. 331-2, Support Supply: To shipping asst. foreman, H. C. Miller.

Dept. 333-2, Off-Site Logistics: To support logistics asst. supervisor, D. C. Sylvester.

Dept. 335-2, Service Parts: To support logistics asst. supervisor, V. A. Hoaglund, W. R. Smith.

Dept. 350, Support Field Operations: To chief of base support operations, A. Calman Jr. To chief of product support-base, H. C. Harding.

Dept. 351, Field Modification: To field modification general supervisor, R. J. Moberly. To manufacturing control supervisor, S. L. Smith. To foreman, J. F. Long, C. E. Parker. To subcontractor coordination asst. supervisor-base, M. J. Walsworth. To asst. foreman, W. Bird.

Dept. 511-0, Engineering Management: To project engineer, R. S. Wentink.

Dept. 522-2, Engineering Administration: To checking group engineer, W. G. Pesek.

Dept. 535-9, Mechanical Design: To design group engineer, L. F. Weikum.

Dept. 543-0, Electrical Design: To electrical design engineer, Orison Wade.

Dept. 549, Electronics Design: To electronics group engineer, C. R. Cearley. To design group engineer, C. J. Banks. To asst. electronics group enigneer, R. O. Packer. To asst. design group engineer, P. D. Yarrington.

Dept. 551-5, Electronics Design: To electronics group engineer, B. G. Anderson.

Dept. 576, Test Laboratories: To test planning control supervisor, J. W. White II. To test planning control asst. supervisor, R. P. Logan. To asst. test lab group engineer, E. M. Gielow, J. C. Preston. To asst. supervisor, A. E. Betcher, R. D. Crouse.

Dept. 579-5, Field Test Engineering: To flight test group engineer, Walter Stoermer Jr.

Dept. 593-2, Reliability: To senior reliability group engineer, M. Loeb.

Dept. 600-0, Base Activation: To asst. to manager of base activation, Atlas E and F series, G. L. Burton.

Dept. 607-0, Base Activation: To asst. to manager of base activation, Atlas E and F series, R. D. Wasser. To asst. to manager of base activation, L. F. Lau.

Dept. 780-0, Electronics Manufacturing: To foreman, G. M. Shaheen.

Dept. 832-1, Procurement Planning: To material control general supervisor, M. E. Fisher.

Dept. 833-5, Stores and Traffic: To receiving and stores general foreman, Lemoin Cox.

AFMTC

Dept. 571, GD/Astronautics Operations: To asst. foreman, G. J. Kadlec.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch complex asst. supervisor, E. D. Burnett, W. D. Kurtz. To asst. foreman, J. F. Lambright, J. L. Shockley.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To production control foreman-base, H. E. Mowery. To subcontract coordinator-base, L. E. Ford. To industrial engineering supervisor-base, F. E. Bean. To production control asst. foreman-base, J. L. Leonard. To inspection asst. supervisor, F. O. Clark. To timekeeping asst. supervisor, P. A. Scott. To transportation asst. foreman, A. J. Turner Jr.

EDWARDS RS

Dept. 575, GD/Astronautics Operations: To guard lieutenant, L. G. Campbell.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To scheduling and analysis supervisor-base, G. E. Havener. To activation engineering asst. supervisor-base, C. N. Raney. To launch complex asst. supervisor, F. E. Gue, H. G. Poynor. To asst. foreman, S. R. Anderson, J. W. Howe, A. C. McCutchan, J. D. McKibben, E. G. Mowery, E. R. Schwabel, R. B. Thomson.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To chief of launch complex group, H. L. Sterling. To foreman, R. M. Gallego.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To inspection asst. supervisor, P. W. Sanders, N. A. Schryer Jr.

SYCAMORE CANYON

Dept. 573, GD/Astronautics Operations: To foreman, W. C. Johnson. To asst. foreman, J. C. Griffiths.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To operations manager-base, M. R. Ubben. To chief of launch complex group, R. R. Puterbaugh, E. H. Southard. To subcontractor coordination supervisor-base, K. M. Halvorsrud. To subcontractor coordination asst. supervisor-base, L. W. Sanford. To asst. foreman, P. J. Flynn. To activation engineering asst. supervisor-base, R. E. Martin.

Service Emblems

MAIN PLANT

Service emblems due during the period Nov. 16 through Nov 30.

Twenty-year: Dept. 110-0, I. U. Eggert Jr.; Dept. 351-1, O. J. Conrad; Dept. 598-3, K. K. Rinker; Dept. 771-0, B. K. Gingery.

Fifteen-year: Dept. 110-0, C. W. Power; Dept. 170-1, Alexander Mix; Dept. 220-4, D. J. MacDonald; Dept. 344-2, E. J. Kulczyk; Dept. 758-0, Fay J. Mathis; Dept. 832-1, G. D. Sanders.

Ten-year: Dept. 100-0, A. P. Ritter; Dept. 130-7, S. W. Ellsworth; Dept. 220, Mildred L. Burkhead, F. J. Sabatka; Dept. 250, C. D. Fitzpatrick, M. A. Long; Dept. 270-4, N. K. Polakowski; Dept. 290-3, Lois E. Pringle.

Dept. 322-7, J. L. Howard; Dept. 331-2, Stella A. Stowers; Dept. 410-0, J. A. Drazkowski, J. B. Murphy; Dept. 453-0, A. I. Saito; Dept. 560-0, R. S. Campbell; Dept. 756-1, Jacob Housman; Dept. 758-0, J. A. Wiggins; Dept. 759-0, J. R. LeGerrette; Dept. 773-0, H. M. Romero.

ALTUS AFB

Ten-year: Dept. 617-7, P. F. Black.

FAIRCHILD AFB

Ten-year: Dept. 613, F. D. Harkins, M. L. Stevens.

LINCOLN AFB

Ten-year: Dept. 616, J. G. Linebarger, C. E. Wheary.

SCHILLING AFB

Ten-year: Dept. 615, D. F. Rogers, J. E. Wood.

SYCAMORE

Fifteen-year: Dept. 573-3, D. W. Burright, C. H. Linn.

Ten-year: Dept. 573-4, K. L. Allison.

Births

MAIN PLANT

ALLEN—Son, James B. III, 8 lbs., 8 oz., born Nov. 2 to Mr. and Mrs. J. B. Allen II, Dept. 335-3.

BERNIER—Son, Edward Louis IV, born Nov. 7 to Mr. and Mrs. E. L. Bernier III, Dept. 452-0.

HANS—Son, Robert Earl II, 7 lbs., 10 oz., born Oct. 27 to Mr. and Mrs. R. E. Hans, Dept. 344.

TRACY—Daughter, Kelly Irene, 6 lbs., 15½ oz., born Oct. 18 to Mr. and Mrs. Robert C. Tracy, Dept. 342-2.

SYCAMORE

GOODALE—Son, Christopher Charles, 8 lbs., 12 oz., born Nov. 7 to Mr. and Mrs. L. E. Goodale, Dept. 573-4.

Deaths

MAIN PLANT

CHAPMAN—Alfred M., Dept. 220-6. Died Nov. 10. Survived by mother, Bertha Chapman.

REINWALD—Aime J., Dept. 773-0. Died Oct. 31. Survived by wife, Esther, Dept. 16, GD/Convair.

ALTUS AFB

DEEGAN—William M., Dept. 617-4. Died Nov. 9.

DYESS AFB

ENGLISH—George W., Dept. 618-4. Died Nov. 12.

Personals

MAIN PLANT

I would like to express my deepest gratitude to all of our friends at Convair, especially those in Dept. 3-7; and at Astronautics, specifically Depts. 773, 220, and 341, for the many expressions of sympathy, cards, and flowers received at the death of my husband, Aime J. Reinwald of Astronautics Dept. 773-0.

Esther Reinwald,
Convair Dept. 16-8.

* * *

I wish to express deep appreciation to friends at both Convair and Astronautics for the messages of sympathy and beautiful flowers received at the death of my husband, Armand J. Molleur (retired).

Phyllis Molleur.

Material's Holiday Dance To Be Dec. 15

Tickets are on sale for a Dept. 800 (material) Christmas party at Stardust Hotel, Dec. 15. Tickets (a total of 400) will be sold for $2.50 each, first-come, first-served.

A buffet dinner will be served at 7:30 p.m., with dancing from 9 p.m. to 1 a.m. J. S. Randazzo, arrangements committee chairman, has asked all who attend to bring food for distribution to needy families.

General Dynamics NEWS

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GETTING STARTED—Discussing planned mechanization of material and cost control systems with R. E. Poling, material operations manager, seated right, are new appointees L. H. Allen, left, R. R. Tompkins, T. E. Becht and F. J. Parker.

Mechanization of Material, Cost Control Scheduled

Planned mechanization of General Dynamics/Astronautics material and cost control systems scheduled during the coming year has resulted in new appointments within material operations (Dept. 830).

Key shift in the realignment announced recently by R. E. Poling, manager of material operations, is assignment of R. R. Tompkins, chief of material control, to head a special team responsible for installation of the improved system.

During the period of Tompkins' special assignment, all material control functions will be under direction of T. E. Becht, general supervisor.

Additional department appointments in recent weeks include that of F. J. Parker, chief of stores and traffic, and L. H. Allen, chief of procurement planning.

The improved material and cost control system will involve reorganization of methods relative to material identification, stores, accountable records, vendor evaluation, open commitment control, and material release.

At the heart of the system is the new IBM 7070 computer recently acquired by GD/Astro for business applications.

"These system refinements are expected to advance GD/Astro's competitive position in the aerospace field by increasing efficiency in applicable material operations," Poling explained.

Annual Children's Xmas Party Will Be Held This Year on Dec. 16

The fourth annual Christmas party for needy children at General Dynamics/Astronautics has been set for Dec. 16 this year.

This is the affair in which many groups, organizations and individuals pitch in to provide 150 youngsters with the elements of a big Christmas.

Salvation Army supplies the names of children and helps to administer the program. Employees' Con-Trib-Club gives $2,500 to buy clothing and gifts. Astronautics Recreation Association and its Wives' Auxiliary help. Prophet Co., its employees and suppliers, donate and prepare food, while Davidson Brothers adds sweets and prizes for games.

Many others help, in wrapping gifts, in picking up and delivering children to their homes and in entertaining and conducting the party.

Each child receives a full outfit of clothing, including shoes, and an array of gifts. They participate in games and contests and enjoy lunch and refreshments.

Wives' Auxiliary members are currently handling the task of fitting each child with clothes and shoes and in selecting gifts.

Volunteers will be needed for the party set for noon Dec. 16. In addition, a "wrapping party" will require volunteers from 7:30 to 9:30 p.m. Dec. 11 at the Astro main plant cafeteria to wrap more than 800 gifts.

Information on the program is available through Dixie at ext. 600 at the main plant.

Dialing to Plants 1, 2 From Astro Changed

A change in telephone dialing procedures between General Dynamics/Astronautics main plant and Plants 1 and 2 will become effective at 6 p.m., Saturday (Nov. 25).

Calls from Plant 71 phones to Plant 1 will be made by dialing 51 followed by the extension number. Calls to Plant 2 extensions will be prefixed by 52.

All other inter-site dialing procedures remain unchanged. The change is reflected in a new page to GD/Astro telephone directory now being distributed.

ASME Reps. Selected For GD/Astro Points

The San Diego chapter, American Society of Mechanical Engineers (ASME) has announced appointment of area representatives to encourage participation in ASME affairs by GD/Astro employees eligible for membership.

ASME representative at GD/Astronautics is R. O. Martin, Dept. 541-4, ext. 1631, and area representatives are R. J. Barrett, ext. 2928 (Bldg. 1 and 26); R. V. Madonia, ext. 3164 (materials building and Sycamore); and B. B. Spillane, Plant 1, ext. 739.

Representatives in Bldg. 3 are A. J. Maury, ext. 2891 (4th floor); J. T. Heffron, ext. 1641 (floors 5 and 6); and Carole Johnson, ext. 2474 (3rd floor). In Bldg. 4 they are C. F. Johnson, ext. 2276 (components test lab); P. H. Schuetz, ext. 3495 (systems test lab); while E. A. Kaelin, ext. 715, takes care of remaining portions of Bldg. 4 and Bldg. 5.

Bill Chana Manager Of Field Support

W. F. "Bill" Chana, formerly General Dynamics / Astronautics operations manager at Fairchild AFB, has been named manager of support field operations by E. A. Reynolds, director of product support.

Chana replaces D. A. Waters who has moved to product support staff reporting to Reynolds for special assignments.

Chana joined Astro in early 1960 after working almost 20 years for GD/Convair.

WHEELOCK NAMED ROCKETDYNE REP.

V. J. Wheelock has replaced E. E. Strain as representative-in-charge of the Rocketdyne field office located at GD/Astro.

Storage Tank Sunk in Silo

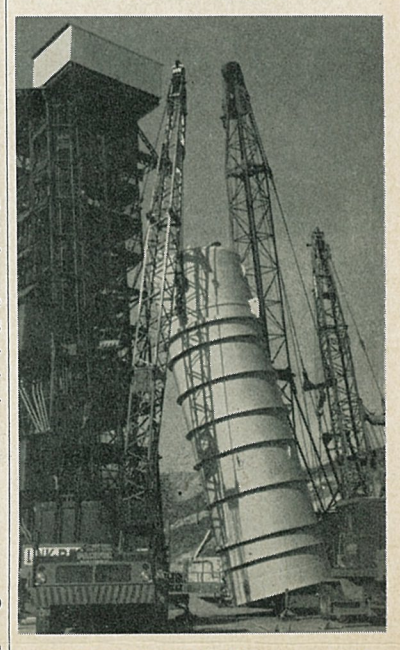
Latest addition to GD/Astronautics' Sycamore Canyon facility will probably never be seen by most employees assigned there.

It is a liquid oxygen storage tank now suspended underground in a 50-foot-deep "silo" at Site 1. The tank, which hangs on four steel turnbuckles in its 18-ft.-diameter hole, will provide liquid oxygen storage in support of Atlas ICBM tests at the stand.

Working with three mobile cranes—one 80-ton, one 40-ton, and one 25-ton unit—the 120,000-lb. steel tank was swung into vertical position and lowered into its "silo" in only five hours.

Installation of the tank and an associated 116-ft. drain line tunnel is part of extensive modification under way at S-1.

Frank DiPiazza, chief of site engineering (Dept. 573), works with George Hutson, resident engineer, and Erv Hodge, project coordinator, both of GD/Astro's plant engineering (Dept. 250-2), to oversee construction.



TEAM WORK—Three massive mobile cranes work together during placement of 120,000-lb. liquid oxygen tank in 50-foot "silo" at Sycamore Canyon facility.

Regular Bus Runs Doubled

GD/Astro has doubled its regular bus runs linking the main plant with Plants 1 and 2.

A bus now leaves the main plant on the hour and the half-hour between 7 a.m. and 3:30 p.m. Return service departs Plant 2 one-half hour later from 7:30 a.m. until 4 p.m. Departure from Plant 1 is approximately 20 minutes after starting at the main plant (i.e. 7:20, 7:50, etc.).

Second shift service remains the same.

The main plant bus stop is at the northwest corner of Bldg. 5. Plant 1 stops are made at Gate 5, southeast corner of Bldg. 8 and the northwest corner of Bldg. 5. Plant 2 stops are at the north end of Bldg. 4 and the west center of Bldg. 4.

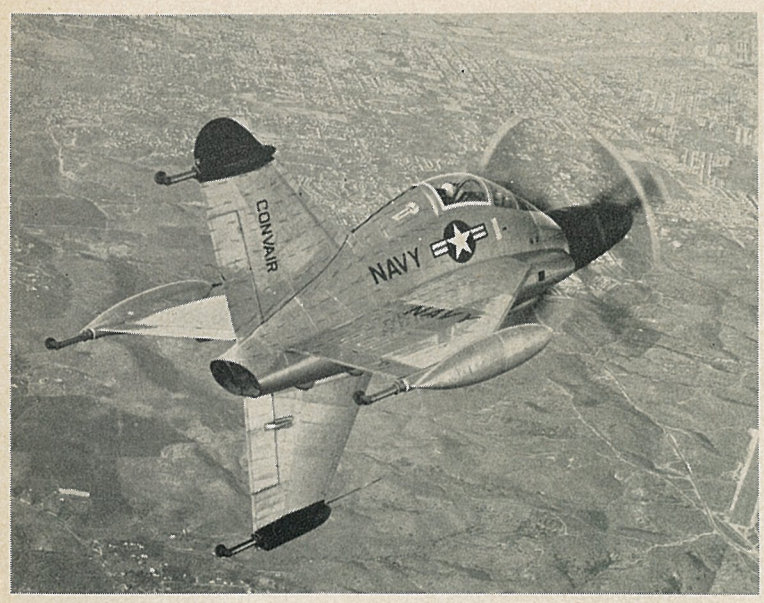
Hourly employees utilizing this service must present a regulation bus pass. No pass is required of salaried employees.

Additional service between these points has resulted from a steady increase of passengers. Monthly utilization of this route has grown from 5,381 in January to 11,399 during October.

Mechanical Design Slates Xmas Dance

Members of GD/Astro mechanical design section and portions of engineering administration will hold a Christmas dinner dance Dec. 9 in the Kon Tiki Room, Catamaran Hotel.

The evening, based on the theme "An Old Fashioned Christmas," will begin with a social hour at 6 p.m., followed by dinner from 7:30 to 8:30 and dancing to the music of the Pacific Aires band until 12:30.



ANOTHER DELTA—Among most unusual aircraft built at San Diego was XFY-1, vertical takeoff fighter nicknamed "Pogo."

Novel 'Pogo' Designed For Convoy Task

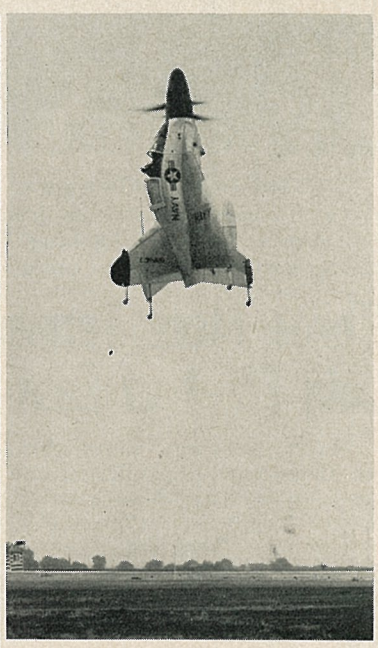
(In 72nd installment of history of General Dynamics / Convair products, XFY-1 gets attention as another application of delta wing.)

A second experimental Navy plane was the XFY-1 Pogo, winner of a 1951 design competition for a convoy escort fighter, capable of taking off from, and returning to, the afterdeck of an ordinary cargo ship. The Convair configuration employed a short, fat fuselage; stubby delta wings, and a pair of long vertical fins, one mounted above the fuselage and one below. On the ground the plane sat nose-up, resting on four caster-like wheels at the tips of the wings and fins.

At takeoff the Pogo ascended vertically until well clear of the field, then nosed over into conventional attitude to attain speeds of more than 500 mph. To land, the pilot pointed the nose skyward and settled back to the ground by "hanging on the props." A special power plant was developed for the Pogo, combining an Allison YT40-A-14 turboprop engine with a pair of 16-foot coaxial, contra-rotating, turbo-electric propellers made by Curtiss-Wright.

Since no man had flown such a craft, engineers evolved a "tethered flight" program, starting with a test stand that held a power plant and part of an XFY-1 fuselage. Under the pilot's control, this simulator could rise five feet.

Next, an elaborate mechanism for limited flight was built under the 184-foot roof of a Navy hangar at Moffett Field, Calif. Cables rose from the nose of the plane to a powered drum at the top of the hangar, running thence to a counterweight at one side. A system of cables and tension regulators was attached to the tail, letting the aircraft rise freely but limiting its lateral travel.



GOING UP—Straight up goes "Pogo" before making transition to level flight.

J. F. (Skeets) Coleman, engineering test pilot, made scores of short vertical flights in the hangar during the summer of 1954, feeling out the plane's controls and characteristics. On August 1 he made the first untethered flight outdoors, rising to 20 feet; over the next two days he worked up to 150 feet. "It's more maneuverable and responds faster than any plane I've ever flown," Coleman reported. "We'll do a little more maneuvering, try a few tricks, as we go along."

Pogo was returned to San Diego and based at Brown Field Naval Auxiliary Air Station while Coleman continued testing, until he had taken the aircraft to several hundred feet, nosed it over to 30 degrees, and traveled the length of the runway. He made the transition to full horizontal attitude on a flight the first week in November, cruising for 20 minutes before returning to land on a 50-foot square. For this, the first successful VTO flight in history, Coleman was awarded the Harmon Trophy.

Lachman Named to Board Of 'Seven Seas University'

A GD/Convair administrator was recently selected to join such men as Ralph Bunche, David Saranoff, and the Crown Prince of Japan as a board member for the University of the Seven Seas.

Millard S. Lachman, executive development administrator, long active in San Diego educational circles, was elected to a three-year term for the "floating" university.

"Approximately 400 students from every nation in the free world spend a semester on board the S.S. Jerusalem participating in formal class study and touring areas of debarkation," he said.

Currently chairman of the San Diego Chamber of Commerce Education Committee, Lachman explained that "the university is a broad and exciting new concept in international education using the world as its lab."

San Diego has been selected as West Coast port with the fall semester, 1962, slated for first voyage.

Lachman, a six-year seminar leader in UCLA's graduate school of business administration, recently completed his 16th year at GD/Convair.

'Big Boom in Forming' Article to Appear

An article by GD/Astronautics' W. W. Cain, engineering practice standards (Dept. 522-4), will appear in the nationally-distributed periodical "Analog Science Fact and Fiction" early next year.

Titled "Big Boom in Forming" the illustrated article concerns various types of high energy rate forming, including explosive forming and General Dynamics' Dynapak, Hydropak and Magnapak methods.

PHYSICIST OFFERS NOVEL THEORY ON CREATION OF SEAS

Modern scientific progress has been the result of many "off-beat" observations, but few can match the experience of a GD/Convair senior staff scientist, Dr. J. J. Gilvarry.

Sitting down for lunch in a Milwaukee restaurant five years ago, Dr. Gilvarry was intrigued by the apparent "roundness" of the oceans on a lighted globe advertising beer.

Curiosity prompted research resulting in a radical new theory, published under Dr. Gilvarry's byline as the lead article in **Saturday Review**, Nov. 4, which holds the oceans were formed by huge meteorites striking the earth.

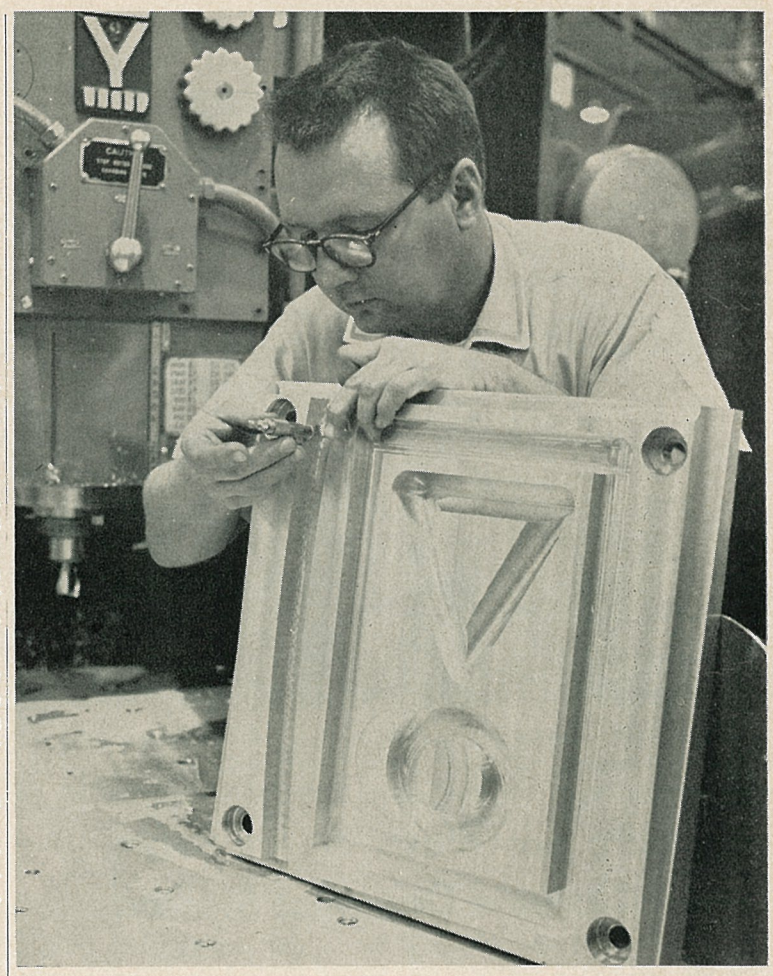
"If this theory is correct, life in other solar systems with the same characteristics as ours would seem likely," Dr. Gilvarry explained.

Dr. Gilvarry, a recent addition to the physics section, was with RAND Corporation, Allis-Chalmers and worked on the Manhattan Project before coming to GD/Convair.

Support Supervisor Chosen For Survey

J. I. Bogle, GD/Astro support documentation supervisor, was selected by the National Security Industrial Association to participate in a material handling survey at Alameda Naval Air Station.

The survey was conducted by leading material handling specialists from government and industry, and concentrated on handling, storage and transportation.



ON THE NOSE—R. F. Stygar of GD/Astronautics uses micrometer to check accuracy of shapes milled to commands from GD/Electronics' C-180 Digimatic numerical control. Device works to .001-inch tolerances.

New Numerical Control Mill Works in Three Dimensions

Newest and most advanced among a variety of numerically-controlled shop equipment in use at General Dynamics/Astronautics is the versatile Morey contour milling machine placed in service recently.

The device works to .001-inch tolerances in three dimensions with only one fixture setting, in response to commands from a "C-180" Digimatic numerical control system built by Information Technology group of General Dynamics/Electronics.

(Other numerical control equipment in use at GD/Astro includes a Milwaukee Matic "machining center" and two Burgmaster turret drills. These are controlled by a punched-tape method for work in two dimensions.)

Because it requires no special tooling or templates, the new contour milling machine produces Atlas missile parts economically, precisely and efficiently.

It automatically turns out parts previously produced by forging or casting.

Machine instructions are recorded with a special-purpose computer as a series of magnetic signals on one-half inch recording tape. When the programmed tape is "played back" through the C-180 Digimatic, the machine head and work table are controlled continuously throughout the entire tool path.

The work table has a movement range of 48 inches in the "X" (right-left) axis, while the head can move a like distance in the "Y" (forward-backward) axis and 30 inches in the "Z" (up-down) axis.

Rate of tool travel is programmed at speeds which are continuously variable from zero to 45 inches per minute. Sixteen spindle speeds from 20 to 3,600 rpm can be selected manually.

A variety of tools can be fitted to the standard milling tool holder.

The new device is in use in GD/Astronautics machine shop (Dept. 731) headed by W. T. Herchold, general foreman. R. F. Stygar operates the machine during first shift, and second shift operation is scheduled for the near future.

Upon its receipt and installation, the machine was "validated" (tested for conformance to specifications) by E. G. Hartdorn and F. L. Unmack of applied manufacturing research (Dept. 290-2).

Don Berkstrom and James Malis, GD / Electronics product service engineers (Dept. 320), took leading roles in placing the controller in service.

GD/Convair Machine to Reduce Costs and Production Time

First automatic milling machine purchased by General Dynamics/Convair for use in its commercial programs is now undergoing acceptance checkouts. Another, a profile contour milling machine, is on order for mid-1962.

Although numerically-controlled machines have been in use at Plant 2 the last few years during the F-102 and F-106 programs, they were installed and owned by the Air Force. The Milwaukee Matic machine installed in Bldg. 1 at Plant 1 the first of this month is the first ordered by GD/Convair.

Two others are located in the San Diego area—one at GD/Astronautics main plant, and the other at Fluidgenics Co., National City.

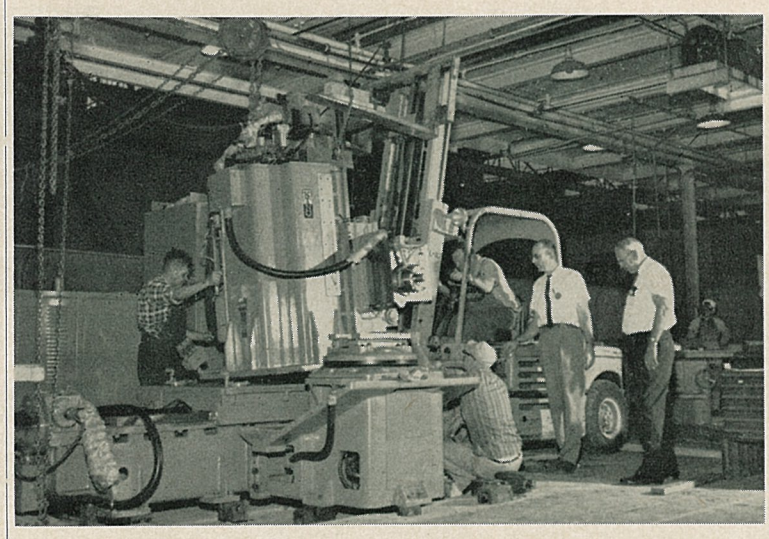
The new machine, expected to cut costs and production time in future programs, should be turning out parts for both GD/Convair and GD/Electronics within the next few weeks, said J. R. Condit, facilities equipment engineer.

All operations — milling, drilling, tapping (or threading), boring—are controlled by punched tape to tolerances as close as .0005 of an inch. It stores 31 tools of various types for different functions. It will select the proper tool for the job from the storage drum and transfer it to the work spindle from taped instructions.

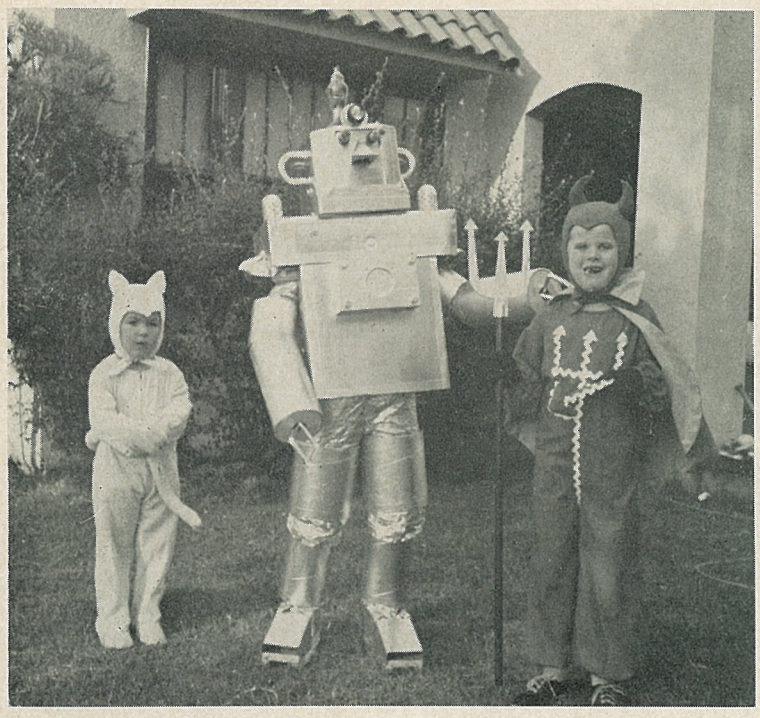
It will be used to machine castings, forgings, intricate and complex airplane components such as valve bodies, supports and brackets, housings, bell cranks, from either aluminum or steel.

At the manufacturer's, Kearney & Trecker Co., Milwaukee, Wis., plant last month for preliminary performance and acceptance for shipment checkouts were Condit; S. C. Padilla of applied manufacturing research; Harry Cooper and Bob Schweitzer of tooling's numerical-controlled programming section. Padilla, Cooper, and Schweitzer remained another week to attend the manufacturer's programming school.

Bob Miranda, Dept. 24 electrical design; Odell Browning and John Evans of plant engineering maintenance attended a maintenance school there early this month. Operators will be trained at the Convair plant by Milwaukee Matic application engineers. Installation was made by Kearney & Trecker field engineers under direction of Joe Long.



INTO PLACE—Carefully positioning new numerically-controlled milling machine in GD/Convair Bldg. 1, Plant 1, is crew from plant engineering (from left) Kenneth Morgan; Bill Hoyt (kneeling); William Gillikin, controlling lift; B. E. Ahring, Dept. 25-5 assistant foreman; and (at far right) Jack Condit, facilities equipment engineer.



"MONSTER"—Bruce Ingram, 8, models robot costume built by father, Don Ingram, GD/Astro Dept. 290-2, while sister, Deborah, right, adopts "devil-may-care" pose. "Cat" at left is playmate.

GD/Astro Son Wows 'em as Robot In $3 Costume Designed by Dad

Not "life-like" but realistic was the Halloween costume designed last month by Don Ingram of GD/Astro's applied manufacturing research (Dept. 290-2) for his son, Bruce, 8.

The costume, which turned Bruce into a walking, grasping, flashing and "beeping" robot, was the hit of the neighborhood, and won prizes at his school carnival for the "most unusual" outfit.

Radio tubes topped the robot's head, and served as "eyes." Lights blinked on shoulders and face and a chest speaker buzzed out "code" signals. Metal "pincers" replaced hands.

"It's something I'd wanted to make for a long time," Ingram said.

The basic structure was fashioned from cardboard tubes of various sizes, and areas around joints were made of accordion-pleated aluminized cloth.

"I spent about 40 hours at night over a three-week period," his father explained. "Most of the materials were odds and ends."

The whole project cost about $3.

"We had only two problems," Ingram added. "First, Bruce weighs only 85 pounds and the 25-pound costume became quite a burden.

"Then, because Bruce looked out of the costume through the robot's mouth, this put the nose at the right level for a lock of his hair to pop out occasionally.

"It's a shock to see a robot sprout a mustache!"

Material Cuts Telephone Bill

Special attention was focused on General Dynamics/Astronautics material organization this month for efforts on behalf of reducing long distance telephone costs.

Concentrated efforts have seen telephone costs lowered more than $16,000 for a three-month period with monthly savings continuing.

Material operations have long been Astronautics' largest and most consistent user of long distance.

The purchasing group of material, in conjunction with office services department, mapped out a pilot program which was launched June 15 for a 15-day trial period. This consisted of utilizing lease-line service rather than direct distance dialing. It proved successful and the entire material organization got "into the act" beginning July 1.

During July telephone charges for this organization dropped $1,900 over the previous month. Still more effort was applied during August, including the request for shorter conversations. Savings for that month climbed to $7,100! While final tabulations are not complete for September, it was felt that overall savings would equal or exceed those realized in August.

Girls to Schedule Basketball Tryout

An ARA-sponsored girls' basketball team is now being organized to enter San Diego Municipal League play. A pre-season tourney opens Nov. 27 with the regular season to start Dec. 12.

Potential players are asked to contact Rudy Venzor, Plant 2, ext. 433 or 664, for additional information and team tryout schedules.

EIGHT CYCLISTS COMPETE IN RUN

Astro Motors, ARA motorcycle club, conducted its annual Turkey Run early this month with eight members competing. Trophies in the 160-mile run went to Jack Wachalek, Dept. 250, and Bob Vaughn, Dept. 731.

Children's Matinee Slated For Dec. 22

ARA is planning a special Christmas matinee movie for children at the Adams Theater on Dec. 22.

The 3 p.m. affair will be free to all children. Complimentary tickets are available at all employee services outlets on a first-come, first-served basis. The program will include feature films Huckleberry Finn and a Three Stooges comedy, and there will be five cartoons.

ARA Bridge Club Names Officers

New officers of ARA Bridge Club, now meeting at 7:30 p.m., each Thursday at Barcelona Bridge Club, Fourth and Juniper, were elected recently.

President is Bob Rustad, with Bruce Beach, vice president, John Donan, treasurer, Gene Alford, publicity chairman, and Guy Mabie, documentation chairman.

The club's Nov. 23 meeting has been cancelled to permit members to participate in the American Contract Bridge Southwestern Regional Championships, being played at Hotel del Coronado, Nov. 18-26.

To stimulate greater interest in bridge among GD/Astro employees and their families, the club is planning a series of lessons to be offered at a nominal cost.

Interested employees have been asked to contact G. M. Alford, Dept. 151-2, so that appropriate class schedules and level of instruction can be established.

Class in Verifax Operations Slated

A special class in operation of Verifax machines for office employees of GD/Astro has been announced by educational services (Dept. 130-3).

The one and one-half hour class will be held twice Nov. 28 with sessions beginning at 9 a.m. and 2 p.m. in Bldg. 17, room 3.

Register by calling Laura, ext. 1933 or 1934.



COTTON PICKIN'—Diane and Vicki, daughters of Aron Marcom, Astro assistant supervisor at Altus AFB, snuggle down gleefully in cotton near Atlas off-site base. Father's assignment to Oklahoma has given San Diego girls contact with contrasting part of country.

Three More Terrier Warships Join Fleet at East Coast Ports

The "missile age" Navy gained three new ships during the past few weeks with commissioning of USS Constellation (CVA-64) in New York Oct. 27, USS William V. Pratt (DLG-13) Nov. 4 in Philadelphia, and USS McDonough (DLG-8) Nov. 4 in Boston.

All three will be armed with General Dynamics/Pomona-built Advanced Terrier missiles.

General Dynamics Corporation was represented at commissioning of Constellation by Patrick J. Sullivan, Dynamics vice president—communication. Harlon D. Filloon, GD/Pomona manager of industrial relations and security, represented GD/Pomona at commissioning of the McDonough; and Paul E. Schwab Jr., of the Washington, D. C., office, was corporate representative at commissioning of William V. Pratt.

Constellation, named for the first ship of the U. S. Navy, is a Forrestal class carrier, is 1,047 feet long, has an extreme beam of 252 feet, and a standard displacement of approximately 75,000 tons. Approximately two dozen frigates similar to the original Constellation—which, incidentally, is still afloat—could theoretically be placed on the carrier's 4.1-acre flight deck.

GD/Electronics Wins Contract For 'Talking Bird' Equipment

General Dynamics / Electronics at Rochester, N. Y., has been awarded an Air Force contract to supply single sideband (SSB) communications equipment for "Project Talking Bird."

The contract will be administered by the Rome Air Materiel Area at Griffiss Air Force Base.

Project Talking Bird is a program to develop a world-wide flying communications system. C-130A or C-130B aircraft, capable of moving into forward battle positions, will be equipped with a variety of communications equipment. Each Talking Bird will be a self-contained operational communications center with direct voice communication with the Air Force Pentagon command and other major air command and control centers.

GD / Electronics is supplying one-kilowatt SSB transmitters and receivers and associated equipment for the first six Talking Birds, which will be strategically located around the globe. This equipment will make possible both long-range and short-range communications.

GD/Electronics SSB equipment will provide digital tuning, broadband amplifiers, high stability frequency synthesizers, functional noise blankers, and heat sink cooling. Modular construction will be used throughout for high reliability and ease of maintenance.

Ray Quinn Appointed Material Cost Mgr. At GD/Astronautics

Appointment of Raymond H. Quinn as manager of material cost (Dept. 840) was announced this week by F. J. Traversi, General Dynamics/Astronautics director of material.



R. H. Quinn

Quinn joined GD/Astronautics earlier this year as chief of material price analysis, and was previously manager of budgets and reports for Gillette Safety Razor Co., Boston.

A native of Cambridge, Mass., he is a business administration graduate of Northeastern University and attended Bentley College, Boston.

In his new assignment, Quinn is responsible for material cost estimating, material price analysis, and material costs and budgets.





HOEDOWN-JAMBOREE — Over 130 "high steppers" from Southern California converged on San Diego recently for All-General Dynamics Hoedown-Jamboree. Shown above (left) after leading square dancers in Grand March are Commissioners and wives (l-r), Dorothy and Maury Scholz, GD/Convair; Mr. and Mrs. John Warren, GD/Pomona; Rosemary and Marty Stutz, GD/Astro.

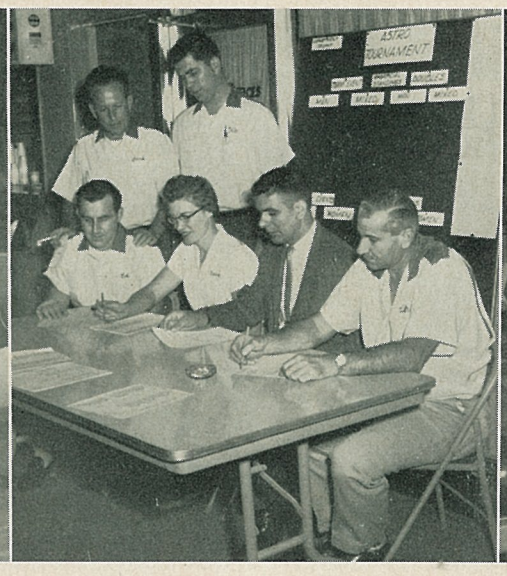
FENCERS COMPETE IN MEET AT PARK

Innovations met members of the joint ARA-CRA Fencing Club at a dual meet at Inglewood Park, Los Angeles, late last month.

Rather than on the usual three-by-ten-meter strip, events were fenced on the grass with no boundaries defined. Also featured was a one-touch elimination epee match, in which contact was indicated by ink-dabbed weapon tips which left a smear on opposing fencers' white uniforms.

Club members taking part included Astro daughter Barbara Proppe, who advanced well into the finals of a women's foil event; Dick Jones, GD/Convair Dept. 160, and his son, Dan; and Mike Hurley, GD/Astro Dept. 597-1, ARA commissioner.







KEGLERS KICK-OFF—Fourth annual ARA plant championship bowling tournament drew over 700 keglers Nov. 11-12 and Nov. 18-19 to Clairemont Bowl. ARA Commissioner Jack Boyle (left and right) makes opening remarks before participants rolled into action. Taking part in tourney's planning are (center) standing, Boyle and Vic Salgado. Seated from left, Ed Frankowski, Barbara Mahaffey, Tony Minneti, chairman, and Clark Saunders.

Open House Planned By Model Railroaders

Model railroaders at GD/Convair and GD/Astro will observe National Model Railroading Week, Nov. 26-Dec. 2.

They will assist in open houses throughout the entire week at model railroad headquarters, House of Charm, Balboa Park. It will be open to the public Sunday afternoon and 7:30 to 10 p.m. each evening next week.

Wives to Watch Cooking Team

A Los Angeles cooking team will demonstrate culinary arts during a program to be sponsored by ARA Astro Wives' Auxiliary at 7:30 p.m., Nov. 29 in the executive dining room.

All Astro wives are invited to make reservations by contacting Mrs. Frank Andolsek, HO-3-4906, or Mrs. Jack Harper, BR-3-4463. There is no admission fee.

Prizes for the Wives' Auxiliary golf tournament at Singing Hills Dec. 1 will be turkeys and golf balls.

All wives with a qualifying handicap (three score cards from any area course) may call Jean Withrow, HU-8-5098, or Lee Baebler, BR-3-9343, Nov. 27 for starting times.

ARA Cyclists Ride Through Sand Storm

Ten members of Astro Motors, ARA motorcycle club, braved a desert sand storm to take part in the annual Death Valley motorcycle run late last month at Furnace Creek Ranch.

More than 1,000 riders faced wind-driven sand and dust which burned faces and clogged engines during the 700-mile run.

Paul Shannon is ARA commissioner for Astro Motors.

Gardeners to Order Imported Dahlias

ARA Garden Club will meet at 7:30 p.m., Dec. 7 in the north wing, ARA Clubhouse.

The new group's first meeting, held earlier this month in Balboa Park's Floral Bldg., attracted 125 GD/Astro employees and family members.

Matters of club organization are on the agenda for the December meeting. In addition, a group order for dahlias from Holland will be taken from members interested in obtaining the fine, imported plants at bargain rates.

Convair Golf Club Will Hold 'Best Nine'

Convair Golf Club's final tournament will be held Dec. 9 and 10 at Torrey Pines south course.

This will be a "best nine" event with turkeys to be awarded to the winners. Reservations will be accepted by Juanita Littell, Astro ext. 1158, until noon, Friday, Dec. 1.

Save Material — Don't Throw Your Job Away!

Pistol Buffs To Meet Sun.

GD/Astro employees who are "true of eye and steady of hand" (or simply enjoy pistol shooting) have been invited to take part in the next matches scheduled by ARA Pistol Club.

The group will meet at 9:15 a.m., Nov. 26 at San Diego Police Pistol Range.

At the last club matches, two turkeys were awarded. Ralph Sanderlin received one in a "luck shoot" while the other went to Ken Bunker in a drawing.

Firing the .22 Camp Perry police course, top expert class honors went to Ronnie Legg with 292 of a possible 300 points, followed by Sanderlin with 289. In expert class, winners were Don Smock with 285 and A. B. Carlson with 281.

Howard Bluhm led the sharpshooters with 268, trailed by Mort Williams' 266. Among the marksmen, Leo Berger fired 258 and John Bennett, 257.

The center fire short national match also went to Sanderlin with 280. Roland Schneider followed with 259, and Legg shot 258.

GD Keglers Win Tourney

Keglers from GD/Convair and GD/Astro "bowled-over" all opposition in a clean sweep of the 10th annual Industrial Recreation Council tournament Oct. 28-29 and Nov. 4-5.

Staged at Pacific Recreation lanes, the Astro Five swept first place in men's division and GD/Convair's Astrocons rolled to first place in mixed. Women's division was captured by GD/Convair's Fill-Ins.

Competing against 77 other teams, General Dynamics' torrid bowlers piled up all new tournament records.

Individual winners included Clara Weide (wife of Ralph Weide), high scratch, 230; Gloria Schneider, 611 handicap series; Nancy Tatum, 560 scratch; and Tony Zullo, high game with 258.

Winning team captains were Zullo, Astrocons; Helen Kiesel, Fill-Ins; and Bill Geopfarth, Astro Five.

Ex-Hockey Player? Team Is Organizing

Former hockey players now working at GD/Convair or Astro are sought to bolster an already-organized hockey team representing San Diego.

The team plays in the Los Angeles and Burbank area. Interested parties may contact Jerry Murdock at ext. 3704, Astro.

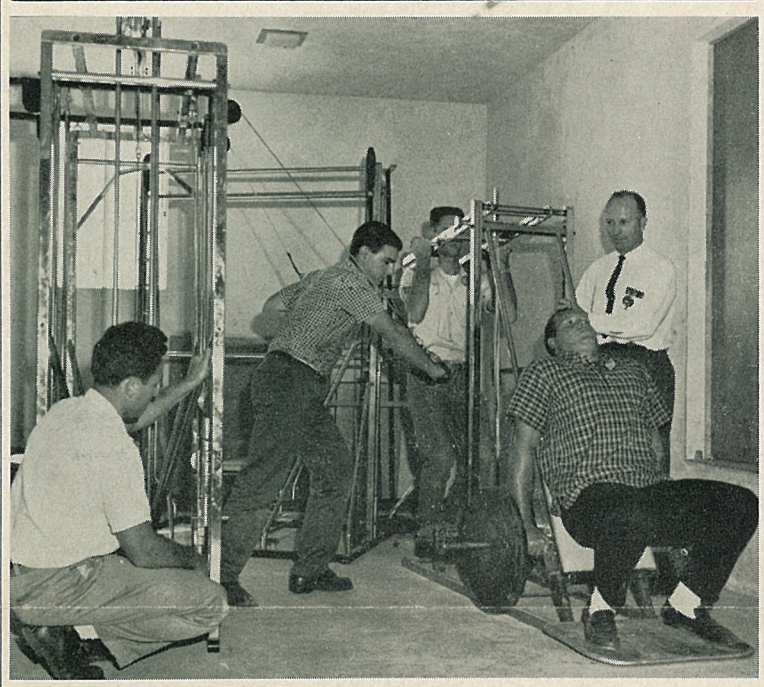
Salvage Sales Schedule Listed

Salvage yard schedule for employee sales at General Dynamics/Convair and General Dynamics/Astronautics sites for the next four-week period:

GD/Convair—Nov. 25 and Dec. 9.

GD/Astro—Dec. 2 and 16.

Sports & Recreation



MUSCLE-BUILDERS—ARA Physical Culture Club members Ronald Block, Stan Singer, Jim Reese and Jess Johnson test club's new muscle-building equipment as Clyde Burkhart, ARA commissioner (standing right), looks on.

Muscles Flabby? Overweight? Gym Equipment Available

ARA's Physical Culture organization, which has recently acquired special health equipment with a retail value of nearly $6,000, now offers GD/Astro employees a chance to "look better, think better and feel better."

Much of the new equipment is set up in temporary 20 by 22-ft. quarters in the south wing of ARA Clubhouse. Portable equipment can be moved into the facility's main auditorium.

Equipment for both men and women—for building muscles or trimming figures—is included.

For men there is a universal "press" machine; a dual-purpose device for building upper and lower leg muscles; two leg presses; a chinning bar; two inclined benches; two flat benches; an Olympic lifting set; a "leg curl" machine; and a wide assortment of dumbbells and barbells.

Girls are offered use of a "butterfly" set; an elaborate roller reducing machine; two belt vibrating machines; and special lightweight dumbbells and barbells. A steam cabinet will be installed later.

Both sexes can benefit from an elaborate pulley setup which can be used for reducing, or for developing arm, shoulder, or abdominal muscles.

"Most are amazed at what use of this equipment with some regularity can do to help them feel better," said Clyde Burkhart, ARA commissioner. "With proper diet, only 10-15 minutes on alternate days can work wonders."

Pending completion of additional facilities, physical culture activities are conducted on an informal basis. To take advantage of the equipment, groups—or individuals—simply contact Burkhart (ext. 1226) or ARA Headquarters (ext. 1111) to schedule workout periods.

"We make every effort to insure that each group includes someone familiar with correct use of the equipment," Burkhart explained. "No heavy weight-lifting is really necessary to achieve results, and a planned program is not necessarily a 'back breaker.'"

As clubhouse space grows, the physical culture organization is foreseen as a parent group to a variety of specialized clubs.

Existing exercise facilities are available to all GD/Astro employees and families without cost.

Two Records Fall At Archery Match

Two records were smashed at the Archery Club's novelty match when the largest number of bowmen ever to shoot at Balboa Park range turned out.

Al Phipps, CRA commissioner, said 88 archers converged on the park range to compete for turkeys Nov. 12.

Covered by Channel 10, highlights of the match will be shown tonight (Nov. 22) at 7 p.m. on Lute Mason's "Sports Unlimited" program.

"This was a warm-up for the IRC trophy shoot which will feature 14 animal targets, 14 hunter targets and 28 field targets Dec. 10," Phipps said.

ARA Calendar

(GD/Astronautics Recreation Association has some 40 activities in operation for employees. For information, call ARA Headquarters, ext. 1111.)

★ ★ ★

ASTRO LENS — Meeting 7:30 p.m., Dec. 3 in Photo Arts Bldg., Balboa Park. Year-end contest and election of officers for 1962.

ASTRO NOTES—Meeting and rehearsals every Monday, 7:30 p.m., ARA Clubhouse. New members in all voice ranges needed.

BRIDGE — Regular play at 7:30 p.m., Thursdays, Barcelona Bridge Club, Fourth and Juniper. No meeting Nov. 23.

CHRISTMAS DANCE — ARA-sponsored fete set for International Room, El Cortez Hotel, 8 p.m.-1 a.m., Dec. 9. Tickets at $1 per person available at employee services outlets.

PISTOL CLUB — Matches at San Diego Police Pistol Range, 9:15 a.m., Nov. 26.

TEEN-AGE CLUB—Semi-formal Christmas dance in Astro cafeteria, 7:30-11 p.m., Dec. 16.

WIVES' AUXILIARY — Cooking demonstration, 7:30 p.m., Nov. 29 in executive dining room. Free admission. Reservations with Mrs. Frank Andolsek, HO-3-4906, or Mrs. Jack Harper, BR-3-4463.

DEPT. 521 BEAUTY REPRESENTS ASTRO

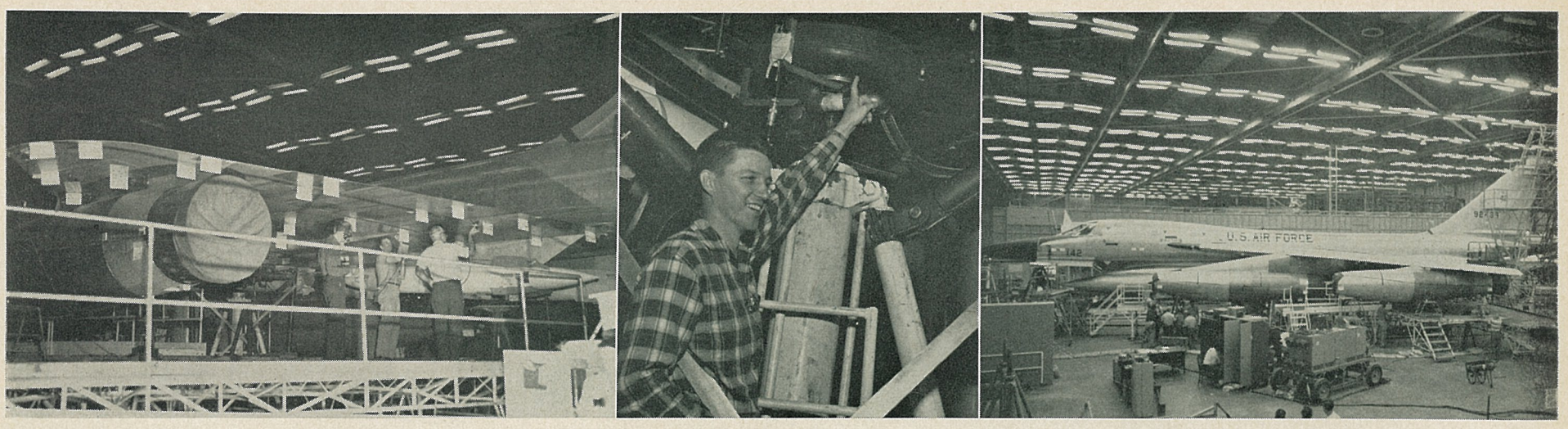
Ingrid Leyrer, GD/Astro Dept. 521-7, represented ARA Astro Skiers in the Snow Queen contest during the dance for area ski clubs last week.

Newly elected officers of the group are Joan Brennan, president, Rollin Ratcliff, vice president, Helen Navey, secretary, and Bob Weaver, treasurer. Larry Atwell is ARA commissioner.

First ski trip of the season will be held over New Year's holiday. Employees interested have been asked to contact Atwell, ext. 1573.



COOL BEAUTY—Ingrid Leyrer, Dept. 521-7, is Astro Skiers' "Snow Queen" for 1961-62. She represented ARA club as candidate for area title at San Diego Ski Association dance Nov. 18.



"FLOATER"—In center GD/FW project structures engineer A. C. Murphy points to air-filled tire on wing jack used to suspend Hustler No. 42 in vibration test. Vibrations were checked constantly at eight stationary points (left) in addition to roving checks. At right vibrations are fed into machine and data recorded in foreground.

Value Control Programs Gain With Over 1,000 Indoctrinated

Over 1,000 General Dynamics men have been indoctrinated in value control principles since the program, aimed at better quality for less cost, was initiated.

Pioneering the movement was GD/Pomona three years ago. Since the program was made plant-wide in late 1959, over 600 have been trained in application of value control techniques. The 15th seminar there was concluded last month with net savings since January, 1960, from projects completed at near $2 million.

By the end of this year, all executives at GD/Pomona will have attended orientation sessions. Heading Pomona's organization is Ed Heller, who as value control coordinator, is responsible for the program's application in all major departments.

Close on the heels of GD/Pomona were Astronautics and Fort Worth Divisions. At Fort Worth, 400 graduated from 10 seminars during the program's first year. Bill McMurry of educational services has been in charge of coordination. However, this fall B. G. Reed, vice president - operations, was named to head a value control review board for correlation of all value control efforts.

Astronautics is conducting its 16th value control seminar. Sessions have been scheduled consecutively since the program was formally inaugurated a year ago. Up to this point, 220 have been trained, Everett Lindem, educational services coordinator, reported.

At GD/Convair, almost 100 supervisors attended a familiarization course in May, 1960, under educational services arrangements.

Stress on value control has been pointed up with recent appointment of H. P. Williams as value control manager. First seminar in the new program opens next Monday (Nov. 27) for 40 men chosen from departments throughout the division.

An executive seminar was held early this month at San Diego under auspices of E. Warren Fedderson, General Dynamics director of manufacturing engineering. Heller conducted the sessions.

Materials Expert Authors New Book

Dr. R. F. Rolsten, GD/Convair materials research expert, is the author of a recently-published book dealing with new materials processes entitled "Iodide Metals and Metal Iodides."

Rolsten joined GD/Convair last year. He spent ten years in research at E. I. du Pont de Nemours, Battelle Memorial Institute and Ohio State University where he received his Ph.D.

880-M Performance Perfect in October

Alaska Airlines' Convair 880-M jetliner recorded a 100 per cent performance during its second full month of operation, R. W. Gilbert, the airline's executive vice president, reported.

During the month of October the "Golden Nugget Jet" operated every one of its scheduled 31 round-trip flights between Seattle and Alaska. The jetliner was flown to Seattle after its delivery at the San Diego plant the end of July.



BRIEFING—GD/Pomona's Ed Heller, value control expert, this month conducted special value seminars for selected groups in Bldg. 19 at San Diego.

GD/Astro Scholars Graduated With Distinction by SD State

Seven recent San Diego State College graduates, all attending on GD/Astronautics scholarships, achieved major academic recognition during undergraduate careers.

James L. Crock, who graduated with highest honors and distinction in accounting in June, has received the Elijah Watt Sells Award for an outstanding score in the Uniform Certified Accountant Examination. He was among 12 singled out for the award from over 11,500 candidates.

Other scholars honored upon graduation were Edwin W. Barrett, honors and distinction in accounting; Larry C. Brown, honors and distinction in chemistry; and Alfred B. Hughes, high honors and distinction in physics.

Also, John McBride, distinction in engineering; James L. Shores, honors and distinction in mathematics; and Louis G. Tramonti, high honors and distinction in engineering.

47 Jet 880s Flying Over Airline Routes

Convair 880s in passenger service—47 are now flying over domestic and foreign routes—had piled up a total of 75,870 hours flying time by the end of October.

Time was counted from May, 1960, when the first 880 went into service with Delta Air Lines. Now carrying passengers are 11 with Delta; 20, TWA; 6, Northeast Airlines; 880-Ms are with Alaska Airlines, 1; Swissair, 2; Japan Air Lines, 3; Viasa of Venezuela, 2; Civil Air Transport, Formosa, 1; Federal Aviation Agency, 1.

B-58 'Suspended in Air' For Flutter Testing Of Multi-Weapon Shape

General Dynamics/Fort Worth engineers recently ran what may be the first ground - vibration tests ever conducted in this country on a big bomber "suspended in air."

Tests measured flutter conditions on a B-58 modified to multiple - weapon configuration. Results will be combined with aerodynamic and damping forces in a complete flutter analysis.

Vibration tests are routinely run on planes while they are being supported by their landing gear.

But the big Hustler—thanks to the ingenuity of GD/FW engineers — assumed an "in - flight" posture by resting on four regular B-58 tires.

The four air - filled tires lay horizontally on air springs atop four airplane wing jacks, located on either landing gear and forward jack points. Pressurized air from four adjoining tanks permitted air to leave and re-enter each tire as the B-58 moved because of various vibrations fed into the plane.

"Since we had No. 42 literally floating on air, we attained a free-free state, wherein no external restraint was exerted," said A. C. Murphy, project structures engineer. "It's as if the plane were actually suspended in space."

Vibrations from one-half to 15 cycles per second were fed into the plane in a number of program combinations. These were induced through eight electromagnetic shakers, four of which are placed on outboard nacelles, two on inboard nacelles, one on the nose and one on the plane's tail section.

Vibration was measured by accelerometers. In addition, engineers used roving accelerometers to make periodic checks over the airplane.

"Individual measurements were, of course, always analyzed in relation to measurements made at other points," Murphy pointed out.

Murphy said the method used to "float" No. 42 is believed to be unique in this country, although the English have conducted similar tests.

The Hustler weighed in at about 150,000 pounds.

Primary purpose was to prove that the modified Hustler—like all other models—is flutter-free.



UP AND AWAY—Second successful in-flight ejection of escape capsule from B-58 was carried out last week at Edwards AFB. Small stabilizing chute opens as capsule is ejected about 250 feet above speeding Hustler. Capsule dropped 5,000 feet before main chute opened, floating capsule to earth.

Four Flight Crews Kept Busy As Jet 990 Crisscrosses U.S.

Four flight crews are keeping a Convair 990 flying day and night, practically around the clock, in the last phase of the test program which will culminate in a Federal Aviation Agency revenue ticket.

Plane No. 6 is flying back and forth across the country in functional and reliability checkouts.

In two days last week it made three round trips to Miami, Fla. First flight in F&R left San Diego at 7:22 a.m. the morning of Nov. 13, arrived in Miami in exactly four hours. Returning, the plane touched down at Houston; and at Fort Worth, Tampa, and Phoenix on other flights.

Although basic routes will take the plane cross-country to Florida and back throughout F&R flights, side trips will be made to Baltimore and New York. Testing the plane over flights of various lengths, simulating actual airline operations, crews make hops of 350 miles, 1,200 miles, and over.

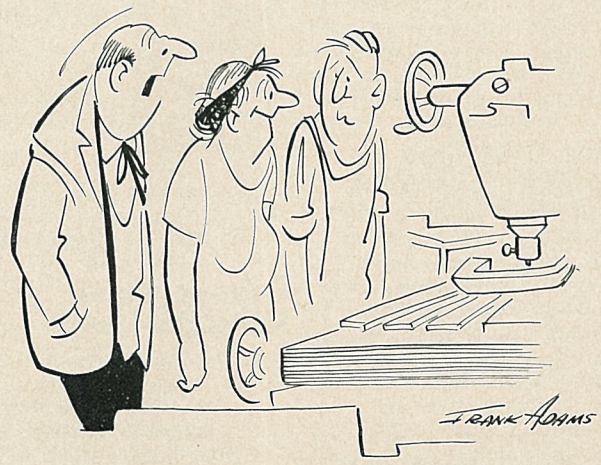
Crew captains alternating on the flights are W. D. Carrier, W. B. Harwell, A. P. Wilson, and John Knebel. Passengers include FAA inspectors, American Airlines, General Electric Co., and General Dynamics/Convair representatives.

Flights will continue into December with final certification scheduled before the end of the year.

In other FAA certification testing, checkouts have been completed on the Bendix autopilot installed on 880-Ms going to FAA, Alaska Airlines, and Swissair.

ASTRO SAFETY CHIEF GETS COUNCIL POST

J. W. Garrison, General Dynamics / Astronautics chief of safety, has been elected to head the membership committee of the Aerospace Sectional Executive Committee, National Safety Council.



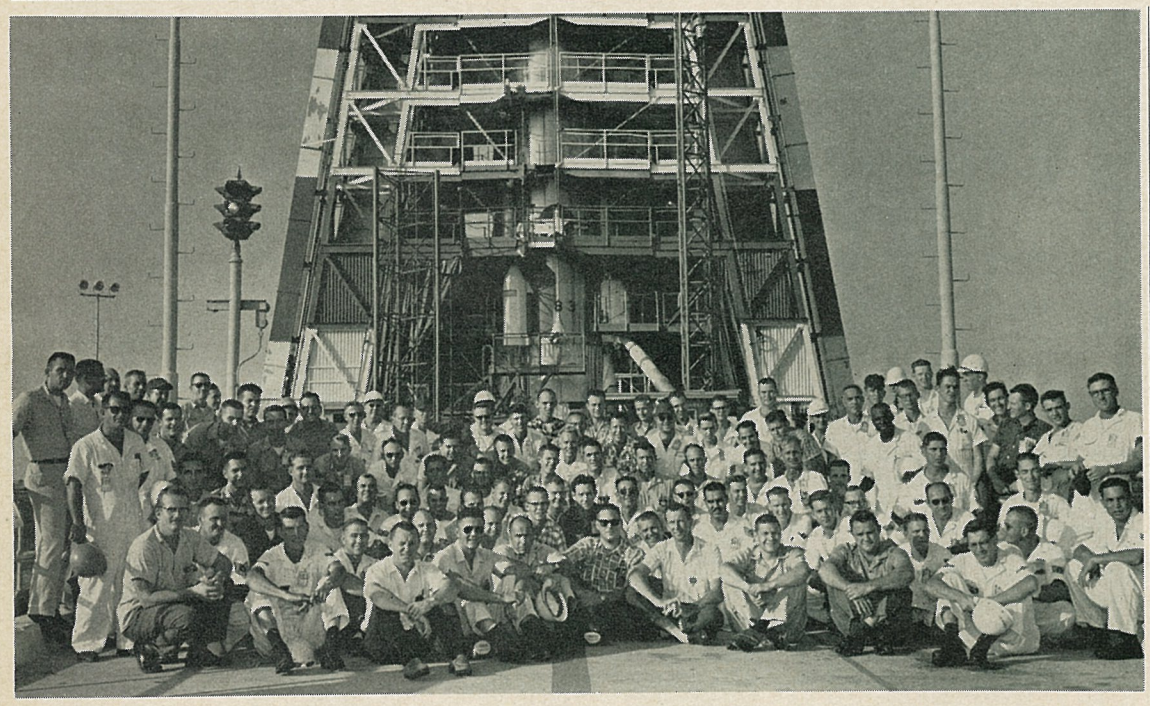
"Can you put Mrs. Brown on a machine that will give her something to think about while she talks?"

GD

ASTRONAUTICS EDITION
(OFF-SITE)

GENERAL DYNAMICS NEWS

Vol. 14, No. 25 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, December 6, 1961



CRACK SHOTS—Astro Complex 11 crew at Cape Canaveral which launched recent second successful Atlas F-series ICBM is shown before gantry. Les Cole, test conductor, is front row center with dark glasses and patterned sport short. To left of Cole is AF Maj. Richard Minor, missile assistant test conductor.

Sell-Out Crowd Hears Von Braun On Space Future

"You at General Dynamics/Astronautics don't have to worry about making your contributions to our nation's space programs. Your efforts in the past have been commendable and your abilities are needed for the future."

Dr. Wernher von Braun, director of National Aeronautics and Space Administration's George C. Marshall Space Flight Center, made this observation last week in addressing the Astronautics Management Club.

The meeting was held in the International Room, El Cortez Hotel.

The club responded to von Braun's appearance with a record turnout (1,443). Tickets were sold out five days before the meeting. Von Braun, in turn, expressed admiration for Astro's work in rocketry.

Responding to an introduction by President J. R. Dempsey, von Braun quipped:

"I understood I was to address your Management Club, but it looks more like your whole corporation here tonight."

Von Braun revealed that on Jan. 1 technical management of Astronautics' Centaur program would shift to NASA's Marshall Center which he heads.

He brought out in general terms some of the beliefs prevailing at the Marshall Center concerning such programs, touching on adaptable scheduling making allowances for the unexpected, general philosophies and, above all, that launch vehicles can be perfected better at the factory than at the launch pads.

"No launch vehicle should ever be released for shipment at the factory that is not perfect in every respect," von Braun said. "When modifications are required at the pads, then the vehicle should again go through the same complete composite check-

(Continued on Page 2)

Atlas Places 'Enos' in Orbit In Spacecraft

Atlas 93-D, a Mercury spacecraft, and a chimp named "Enos" teamed up for a successful orbit and recovery operation last week as a prelude to this nation's first manned orbital flight.

Atlas 93-D performed perfectly in placing the Mercury spacecraft into orbit following a Nov. 29 launch from the General Dynamics/Astronautics-operated Complex 14 in Florida. Thomas J. O'Malley, test conductor, headed the Astro crew on the launch performed in conjunction with the National Aeronautics and Space Administration, the Air Force and associate contractor personnel.

Fired at 10:07 a.m. (EST), Mercury-Atlas 5 led to two earth-circling passes and a recovery operation at 2:53 p.m. (EST) 259 miles southeast of Bermuda. Enos was recovered alive and in good health.

NASA officials then revealed that Astronaut John H. Glenn Jr., (Lt. Col. USMC) has been selected for the first orbital manned flight when scientists are convinced the Mercury-Atlas vehicle is ready.

Meanwhile, GD/Astro last week shipped another "D" series Atlas to Cape Canaveral for use in the Mercury program. Loaded aboard a C-133B cargo plane at Miramar NAS, it arrived early Nov. 30.

Two Atlases Launched From Opposite Coasts

General Dynamics/Astronautics and Air Force crews on opposite coasts launched two successful Atlas ICBM flights within hours of each other Nov. 22.

From Point Arguello near Vandenberg AFB, Atlas 108-D with an Agena-B second stage was launched over the Pacific Missile Range, while from Cape Canaveral Atlas 4-F began a 5,000-mile flight over the Atlantic.

The Florida launch originated from GD/Astro's Complex 11 with Test Conductor Les Cole in charge. The missile—second successful F-series Atlas flight—carried two scientific pods in tandem position on its side.

The Atlas climbed to an altitude of 775 miles and attained a top speed of 14,500 mph. Some 520 miles down range, it released its nose cone which hurtled onward to pinpoint a target in the Ascension Island area.

The test flight evaluated the weapon system's performance over the predetermined range, and demonstrated capability of missile support systems.

It also served to test the nose cone designed for Minuteman ICBM—"second generation" U.S. operational missile.

Air Force Major Richard Minor was missile assistant test conductor for the Cape Canaveral launch, while GD/Astro's J. B. Kercheval was complex assistant test conductor. Jack Barnhart is Complex 11 foreman.

Dollar Pledges at Main Plant Climb to 95 Per Cent of Goal

More than $480,000 had been pledged in General Dynamics/Astronautics' Employees' Con-Trib-Club drive at San Diego by late last week, over 95 per cent of the $504,000 goal.

Participation tops 77 per cent.

Both figures are expected to climb still higher when all tab cards have been returned, J. R. Mitchell, chief of employee services, reported.

Meanwhile, drives at individual off-site bases, where separate dollar goals were set to support agencies in immediate areas, reached a climax, but no total figures were available on progress.

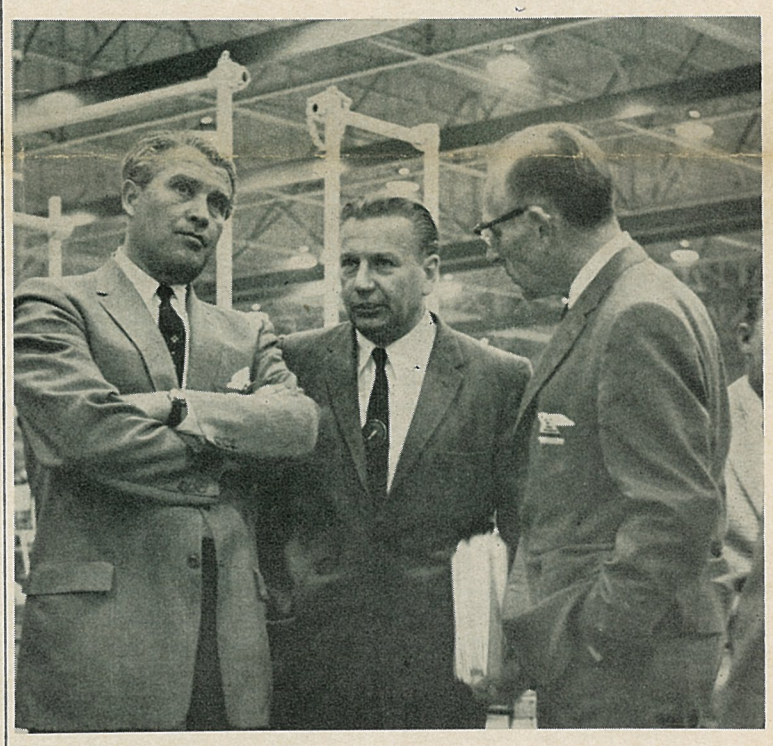
By Nov. 27, advanced product planning (Dept. 105) at San Diego reported 100 per cent participation and 120 and 169 per cent respectively in dollar pledges for hourly and salaried categories.

Product support aministration and support project offices administration (Depts. 300 and 301) attained 100 per cent participation and 122 per cent of dollar goals.

Hourly industrial relations (Dept. 130) employees reported 100 per cent participation and 93 per cent of dollar goals, while salaried employees attained 95 per cent and 146 per cent.

In other departments many salaried groups topped dollar goals. Included were: data processing and management systems (Dept. 101, 150) with 104 per cent; reliability control (Dept. 140) with 100 per cent; controller (Depts. 190-196) with 121 per cent; plant engineering (Dept. 250) with 108 per cent; support center (Dept. 340), with 130 per cent; tooling (Dept. 400) with 115 per cent; factory office and engineering test support (Depts. 700, 756) with 141 per cent; major assembly and missile checkout and acceptance (Depts. 758, 773) with 135 per cent; and electronics manufacturing (Dept. 780) with 103 per cent.

Special praise was voiced by Mitchell for the efforts of hundreds of volunteers who took part in the drive.



SPACE PARLEY — Dr. Wernher von Braun, left, director of NASA's George C. Marshall Space Flight Center, visited GD/Astro last week. He is shown here in factory with Krafft Ehricke, center, Astro's Centaur program director, and Dr. Hans Hueter, director of light and medium vehicles office at Marshall Center.

Plant Appearance Contest Inaugurated

A plant appearance program to improve "housekeeping" in General Dynamics/Astronautics work areas will begin in the near future, with monthly inspections of all department spaces.

The program, initiated at the request of top management, is designed as an inter-department competition, with each of four categories of work areas—office, factory, warehouse and crib storage, and laboratory — competing for monthly awards.

Inspection standards for each category have been established.

"The nature of our business demands close attention to cleanliness in production operations," explained J. W. Garrison, GD/Astro chief safety engineer (Dept. 130-8), whose office set up ground rules.

"High housekeeping standards have a direct application to efficiency of operation," Garrison observed. "While plant engineering (Dept. 250) is responsible for maintenance and repair, individual employees also have a responsibility in keeping their areas clean."

All department areas at Astronautics will be inspected once each month by an inspector accompanied by a department supervisor or alternate. Awards in each area category will be based on inspection reports.

Plaques for monthly winners are now being designed, and will be attached to department signs for prominent display.

Xmas Plans to Help Others Develop in Many Astro Depts.

Plans for "helping others" are occupying many at General Dynamics/Astronautics this week as Christmas approaches.

Efforts are in three categories. One is the annual "coins in the pool" project. Another is the Children's Christmas party. Still another is the practice of "adopting" needy families.

The coins project involves the reflection pool in Astro's reception center, Bldg. 2. Coins which employees and visitors have tossed in during the year will be recovered shortly before Christmas and turned into food, clothing and gifts for needy.

The children's party will take place Dec. 16 in the main plant cafeteria.

Already more than 15 departments and sections at Astro main plant have indicated they will "adopt" families this year and supply them with food and gifts.

Employee services is helping locate deserving families. Information is available through ext. 2657.

★ ★ ★

Gift Wrapping Set For Monday Evening

Monday (Dec. 11) the first group effort involved in staging the Dec. 16 General Dynamics/Astronautics Christmas party for needy children takes place at the main plant cafeteria from 7:30 until 9:30 p.m.

At that time, help is needed to wrap, tag and sort some 800 gifts ranging from shoes and clothing to toys and also in decorating a giant Christmas tree.

This is the fourth annual affair in which groups and individuals combine their efforts to conduct a gala party for 150 of

(Continued on Page 2)

Prizes Offered For ARA Emblem Design and Name For 'Boosters'

Astronautics Recreation Association (ARA) is offering three prizes in each of two contests to Astro folk who come up with the best solutions to two current problems.

One contest involves a new design, the other a new name. Both open tomorrow (Dec. 7) and close Jan. 8. Eligible to take part are employees and members of their immediate families both at the main plant and off-site.

When Astronautics became a separate operating division of General Dynamics Corporation the old "Astro CRA" designation for its recreation program was scrapped. The new designation is ARA. This made obsolete the old "CRA" design utilized for patches, letterheads, brochures, club emblems, etc. A new design is needed that features the letters ARA, but is suitable for use also with the modernistic "GD" symbol for General Dynamics.

Astro's ARA would like some suggestions for designs from which to choose and adopt a permanent emblem.

Each entry must be drawn on an 8½ x 11½-inch sheet of paper or cardboard, either in ink, pencil, crayons or paints.

The second contest is to select an appropriate name for a volunteer group at San Diego that serves as a means of spreading the word about special events, programs and recreational activities. They work in various areas and are supplied special material from time to time. The obvious name, "booster," is not acceptable in that a similar group serving the Management Club now exists.

Again, each entry must be on a separate sheet of paper.

All entries must include the name of the contestant, his department and clock number, home address and plant telephone extension. If the entry is submitted by a dependent, the name of the Astro employee is required.

Entries are to be mailed to Astronautics Recreation Association, mail zone 130-50, at the main plant.

Prizes in each of the contests will be merchandise awards in denominations of $50, $25 and $10 for first, second and third places respectively.

Judges will include members of ARA's Employees' Council and its Women's Activities Council. In the design competition, a member of Astro's art section of communication department will also act as a judge.



TOUGH CHOICE—Jeanne Casey ponders variety of ARA monograms sketched by D. A. George. Suggestions for new design have been invited from all GD/Astro employees in contest opening Dec. 7. Winners will receive prizes.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Nov. 20.

Dept. 101-0, Data Processing: To clerical asst. supervisor, C. E. Wolfe.

Dept. 123-0, Graphic Reproduction: To planning asst. supervisor, R. G. Lykins.

Dept. 175-0, PACE Services: To PACE program supervisor, E. M. Eppstein, J. R. McIntire.

Dept. 193-3, Industrial Accounting: To timekeeping general supervisor, W. H. Simms. To timekeeping supervisor, J. R. Paulson.

Dept. 220, Manufacturing Control: To manufacturing control foreman, J. L. Holzbog. To manufacturing control asst. foreman, G. A. Hillis, John Santos, F. E. Smith.

Dept. 300-0, Product Support Office: To product support administrator-electronic projects, C. C. Campbell Jr.

Dept. 322-9, Support Publications: To support publications supervisor, F. R. Baker.

Dept. 324, Field and Service Engineering: To field engineering general supervisor, D. P. Bender. To service engineering supervisor, G. R. Goddard. To field engineering supervisor, R. J. Mazurkiewicz.

Dept. 330-0, Support Logistics: To chief of support logistics, G. R. Sibley.

Dept. 331-0, Support Supply: To GFE general supervisor, F. M. Mears.

Dept. 333-2, Off-Site Logistics: To support logistics asst. supervisor, J. L. Housand.

Dept. 342-2, Support Quality Control: To inspection asst. supervisor, G. R. Gray.

Dept. 344-3, Support Operations: To asst. foreman, F. J. Ford.

Dept. 351-1, Field Modification: To support calibration group engineer, H. L. Davis, J. C. Tate. To foreman, R. A. Brown.

Dept. 400-0, Tool Engineering: To offsite tool projects coordinator, I. G. Rooder.

Dept. 530-0, Design: To project engineer, F. D. Applegate.

Dept. 603-0, Base Activation: To activation scheduling asst. supervisor, F. B. Spieker, M. J. Tellep.

Dept. 756-0, Engineering Test Support: To asst. foreman, J. S. Adams, L. C. Ferguson. To foreman, W. H. Houchin, D. E. Tibbs.

Dept. 759, Sub-Assembly & Mockup: To general foreman, H. H. Miller.

Dept. 780-0, Electronics Manufacturing: To superintendent, A. E. Hill.

Dept. 831-1, Material Control: To material control supervisor, R. F. Stephens.

Dept. 843-1, Material Price Analysis: To material cost supervisor, R. J. Rose.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch complex supervisor, G. R. Thomas. To asst. foreman, E. O. Babb.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To launch complex asst. supervisor, D. M. O'Donnell Jr. To asst. foreman, L. E. Rees.

EDWARDS RS

Dept. 576, GD/Astronautics Operations: To facility records and control asst. supervisor, W. D. Hunter.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To asst. foreman, R. M. Bratzler, W. J. Moore, M. E. Pershing, C. D. Shulte, P. Neumann. To inspection asst. supervisor, W. F. Harper, W. E. Simmons, M. L. Stouse. To activation engineering asst. supervisor-base, H. W. Riner. To launch complex asst. supervisor, R. N. Willett, J. L. Osborne.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To production control asst. foreman-base, H. L. Gaines. To asst. foreman, H. J. Wissig.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To asst. foreman, K. P. Earl.

SYCAMORE

Dept. 573, GD/Astronautics Operations: To inspection asst. supervisor, R. D. Brant. To asst. foreman, M. Richardson.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To launch complex supervisor, C. L. King. To production control asst. foreman-base, A. L. Collins.

WARREN AFB

Dept. 611, GD/Astronatuics Operations: To production control foreman-base, L. J. Sortor. To asst. launch complex supervisor, R. E. Henry.

Births

SCHILLING AFB

TOUCHBERRY—Son, William Dwight, 7 lbs., 11 oz., born Nov. 22 to Mr. and Mrs. W. H. Touchberry, Dept. 615-0.

Service Emblems

MAIN PLANT

Service emblems due during the period Dec. 1 through Dec. 15.

Twenty-year: Dept. 130-1, M. J. Chilcote; Dept. 756-7, Stanislav Pauchnick; Dept. 759-0, P. P. Standley.

Fifteen-year: Dept. 404-0, Alex Rohr; Dept. 604-0, J. H. Mann; Dept. 759-0, S. P. Contasti, R. J. Koeller; Dept. 811-1, L. C. March; Dept. 833-3, M. J. Dalessi.

Ten-year: Dept. 154-1, G. W. Lyons II; Dept. 155-0, J. H. Nash; Dept. 170-1, E. E. Higgins; Dept. 182-0, L. W. Kegans; Dept. 191-0, Margaret K. Kehle; Dept. 322-7, S. C. Hardy; Dept. 351-3, J. D. Beamer; Dept. 454-0, H. E. Shidner; Dept. 480-0, C. E. Meredith; Dept. 521-6, J. H. Viskil; Dept. 525-5, C. J. Gibson; Dept. 564-1, G. W. Conrey; Dept. 604-0, Harold Lee.

AFMTC

Ten-year: Dept. 571-5, D. M. Maximovich.

ALTUS AFB

Ten-year: Dept. 617-7, R. W. Smith.

FORBES AFB

Twenty-year: Dept. 614-0, G. W. Cooper.

LINCOLN AFB

Twenty-year: Dept. 616-0, L. H. Green.

PLATTSBURGH AFB

Twenty-year: Dept. 620-3, D. M. Carlton.

SCHILLING AFB

Ten-year: Dept. 615, D. A. Falls, W. E. Wheeler.

SYCAMORE

Fifteen-year: Dept. 573-3, D. P. Clopton.

VANDENBERG AFB

Ten-year: Dept. 576, Floyd Fincher, D. F. Ganoe, Burnice Slot.

Deaths

MAIN PLANT

BUCKLAND—William Bert, Dept. 553-3. Died Nov. 22. Survived by wife, Lorna, and daughters Rhonda, Theresa and Collene.

WHITE—Elizabeth P., Dept. 331-1. Died Nov. 16. Survived by daughter, 12, and mother, Mrs. Esther Peterson.

AFMTC

DU CHARME—Albert J., Dept. 571-5. Died Nov. 18. Survived by wife, Jeanne.

EDWARDS RS

SMITH—Jack P., Dept. 575-3. Died Nov. 23. Survived by wife, Mary.

Gift Wrapping Session Set

(Continued from Page 1)

San Diego County's needy youngsters.

Con-Trib-Club sets aside $2,500 for financing and Salvation Army selects the kids and helps with the party. Groups within ARA stage the affair with a yeoman's share of the work (like fitting each child with shoes and clothing) falling to the Wives Auxiliary. Prophet Co. and its food suppliers provide and prepare luncheon. Davidson Brothers adds sweets for each and prizes for games and contests.

Astro's transportation employees give their time to drive vehicles to bring the children to the plant and return them home. This year additional drivers and vehicles may be required.

Work on the day of the party begins before 10 a.m. and consists of rounding up the guests, seeing they are seated at the right place, entertaining them, conducting games, then feeding and showering each with gifts.

While volunteers are being signed up daily, others can always be used. Call Dixie, ext. 600, for details.

Turnout Big For Von Braun

(Continued from Page 1)

out routine employed at the factory."

In his slide-illustrated talk, von Braun traced the history of space ventures by the United States, including those in which Astronautics-produced launch vehicles have participated. He predicted that Astro's Centaur, scheduled for launch in the near future, would play a "very, very important" role in space explorations. He added that Centaur may be a part of Saturn, this nation's largest space vehicle to date. It was successfully launched recently.

He visioned that with luck the United States will place a man on the moon and bring him back by 1970.

Details of Saturn as a launch vehicle for the three-man Apollo spacecraft in various configurations occupied much of von Braun's talk.

He pointed out that now on the drawing boards is a Saturn (the C-5 model) configuration with a proposed 7.5 million pounds of thrust which could put 220,000 pounds of payload in orbit. Several orbiting units of this type, by rendezvous and docking in space, could pave the way for a flight to the moon.

Von Braun's appearance at the meeting coincided with a visit to San Diego for conference with top Astronautics officials.

Special guests at the closed meeting included members of von Braun's Marshall Center staff, key General Dynamics Corporation officials, and top Astro management.

M. V. Wisdom, director of industrial relations, was master of ceremonies for the sponsoring department.

Robbins Appointed To Operations Post

Appointment of F. D. Robbins as manager, operations control, was announced last week by E. D. Bryant, General Dynamics/Astronautics vice president - operations.



F. D. Robbins

Robbins joined the company in October after serving as deputy Air Force Plant Representative at GD/Convair from 1940 to 1950, except for a two-year period of Navy service.

He subsequently served in Air Force civilian assignments at both GD/Convair and GD/Astro.

Blood Volunteers Give 297 Pints

Volunteer blood donors from operations departments at GD/Astro provided 297 pints of blood Nov. 30 to help ease a critical shortage in reserves.

Until that time, Astro's credit with the San Diego Blood Bank had sunk well below regular minimums. Present supply is expected to be adequate until the next quarterly bloodmobile visit.

Sycamore Canyon Test Crews Pass New Safety Milestone

General Dynamics/Astronautics' most distinguished safety record—posted by Sycamore Canyon Test Site—passed another milestone late last month.

On Nov. 18 Sycamore Canyon completed its 1,000th day without a lost time or disabling injury! And at last report the record was continuing.

Last disabling injury at Sycamore Canyon came on Feb. 19, 1959. Since that time employees working at the site have logged 3,546,739 manhours.

The manhours total is slightly more than one month's work for the entire main plant work force, but it would constitute a lifetime's labor for a 40-man crew.

J. W. Garrison, Astro's chief safety engineer, was high in his praise of safe working conditions at Sycamore Canyon and praised individual performance of each employee.

P. T. Gardner, Sycamore manager, added his commendations to all. He said:

"Considering the work exposures we must experience in accomplishing any test program, this achievement becomes even more significant."

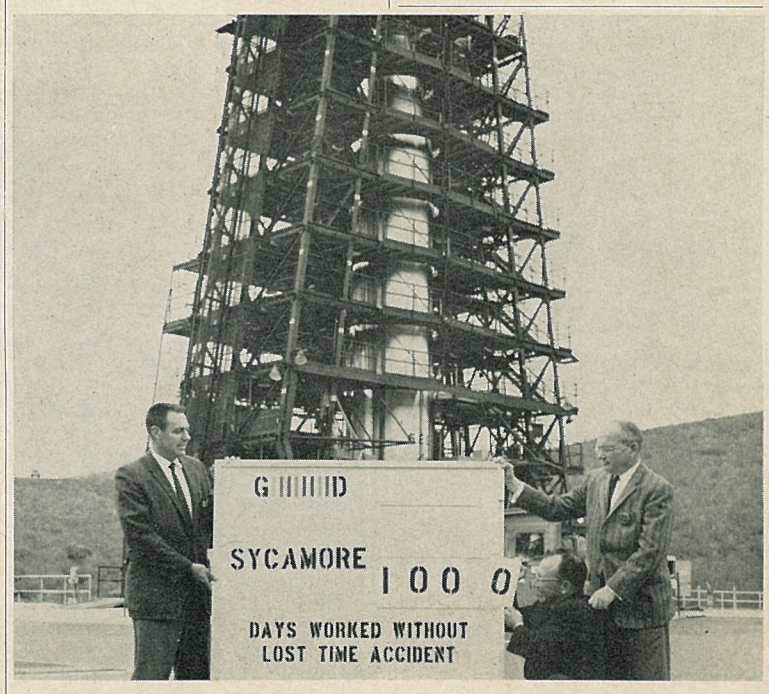
Plant 2 Telephone Number Changed

A new external telephone number and new switchboard hours become effective Tuesday (Dec. 12) at Plant 2.

The new number is CY-7-7111. Switchboard hours will be 7 a.m. to 12:30 a.m. Monday through Friday and 7 a.m. to 3:30 p.m. on Saturday.

Switchboards are closed Sundays and holidays.

The following emergency numbers may be used at these times: hospital, CY-7-3684; industrial security dispatch, CY-7-3692; GD/Convair plant engineering maintenance dispatch, CY-7-1374; GD/Astro plant engineering maintenance dispatch, CY-7-2023.



ASTRO'S FINEST—With Sycamore Canyon Test Site stand in background, safety signs are changed to mark unusual accomplishment—1,000 days worked without lost time accident. J. W. Jarvis, safety engineer, makes change while P. T. Gardner, right, base manager, and F. J. Stewart, chairman of Sycamore's Workmen's Safety Committee, help.

General Dynamics NEWS

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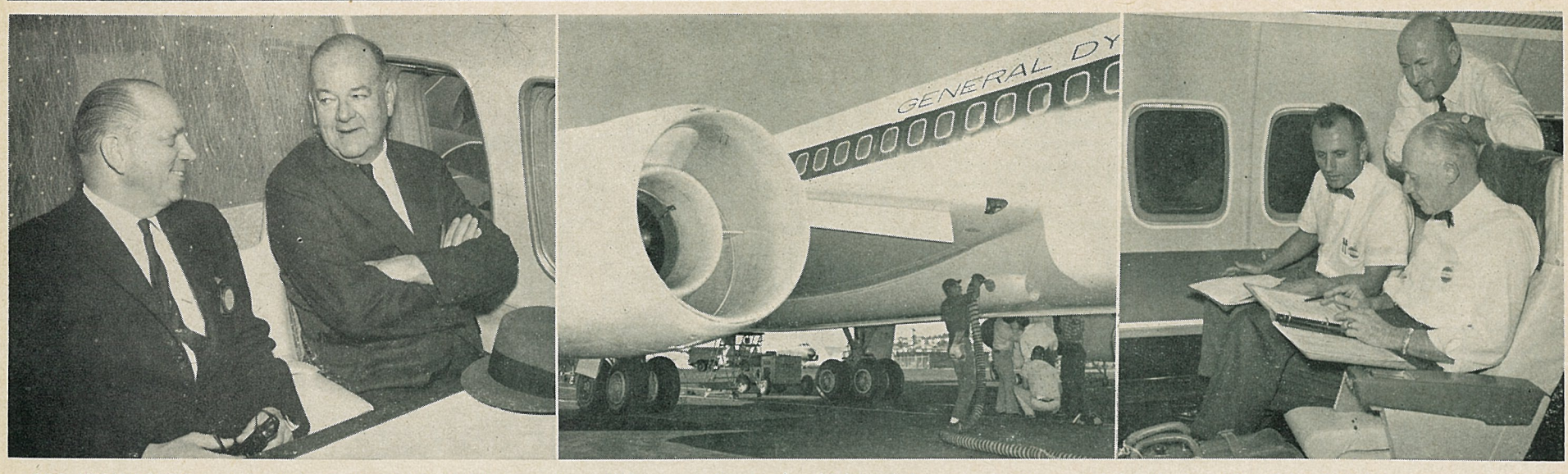
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990 HIGHLIGHTS—At far left, C. R. Smith (right), American Airlines president, and J. H. Famme, GD/Convair vice president and general manager, try out lounge in American Airlines Convair 990 jet airliner at San Diego. Center is 990 caught refueling at GD/Convair on brief stop during functional and reliability test program which took it cross-country round the clock; at far right, FAA inspectors aboard are Mike Brego, F. R. Beemon, R. J. Bowers. Other FAA men on F&R flights included Rudy Kapustin, Jim Butler. F&R program may be concluded this week; FAA certification of 990 is slated by end of year.

New Electroforming Machine Offered by General Atomic

Commercial availability of the first electromagnetic metal-forming machine for industrial use was announced last week by the General Atomic Division in San Diego.

"Magneform," the new metal-working tool, employs lightning-fast bursts of electromagnetic force to assemble, attach and shape metals quickly.

Magneform applies a powerful magnetic field against a work piece of metal in pulses of 10 to 20 millionths of a second, creating pressures ranging up to more than 50,000 pounds per sq. in.

These giant pressures can be used to collapse, shrink or compress tubing, to attach terminal connections onto rope, steel, or coaxial cables, or to swage firmly together sections of telescoping tubing.

In other applications, the magnetic pressure will expand tubing to form a tight-fitting bearing, hub or bushing. Since it is never necessary to bring the work piece into physical contact with the coil producing the magnetic field, Magneform eliminates scratching, marring and other surface damage.

Easily interchangeable coils make Magneform highly versatile. Quick substitutions of coils by the operator permits a variety of successive operations—including swaging, expanding, forming or shearing metals, dimpling, blanking, embossing or coining.

The compact Magneform is housed in a small console, about 4 feet by 2 feet by 3 feet high, and uses a conventional 220-volt, 60-cycle power source. Cylindrical coils up to six inches long and up to six inches in diameter and flat coils with diameters up to one foot have been used so far in industrial applications. Larger coils can be made.

The machines are available to industrial users under lease at approximately $6,000 a year, including maintenance service.

Magneform grew out of experience gained by General Atomic in its controlled fusion research.



MAGNETIC ASSEMBLER—A new machine which can assemble, attach and shape metals using "gravity" is now in production and available on lease from General Atomic, division of General Dynamics. Called Magneform, machine is first to use magnetic field for energy in part formation and assembly.

Delta Expands 880 Jet Service SF to Jamaica and Caracas

Delta Air Lines expanded its Convair 880 jetliner service to South America this month.

Weekly round-trip 880 service was inaugurated Dec. 1 between San Francisco and Caracas, Venezuela, with intermediate stops at Dallas, New Orleans, and Montego Bay, Jamaica.

T. M. Miller, Delta vice president-traffic and sales, said the 88-passenger Convair 880, offering first class and tourist accommodations, departs San Francisco each Friday at 1:05 a.m. PST, Dallas at 7 a.m. CST, New Orleans at 9:30 a.m. CST, reaches Montego Bay at 12:50 p.m. EST. The flight departs at 1:20 p.m. and arrives in Caracas at 3:39 p.m. EST.

On the return trip the 880 jet leaves Caracas each Saturday at 1:20 p.m., departs Montego Bay at 3:25 p.m. EST, arrives in New Orleans at 5 p.m. CST. Its departure for San Francisco is 6:10 p.m. CST, arriving in Dallas at 7:17 p.m. CST and the bay city at 9:25 p.m. PST.

'Dynamic America' A Gift Suggestion

General Dynamics employees were reminded this week that copies of "Dynamic America" will make good Christmas presents.

A limited number of the elaborately illustrated volume continue to be available at employee services outlets at all divisions. Although the book store price is $20, a special rate of $7.50 per copy has been offered to employees.

"Dynamic America" profiles the history of General Dynamics in relation to the nation's industrial progress. More than half of the volume's 1,000 illustrations are in color.

Horne Pledges Strong Effort To Push Electronics Business

A concerted effort to expand General Dynamics/Electronics business in miltary subsystems and systems, and in industrial electronics is under way, President Charles F. Horne reported to his supervisory staff during a meeting at the Electronics Center in Rochester recently.

"We are seeking business," he said, "that requires competent engineering and high quality workmanship which our people can provide. The quality of our products has been demonstrated again and again, and now we must get the business that will continue to make use of our skillful people."



C. F. Horne

Since General Dynamics/Electronics is seeking military business, he said, the division must be organized to work with the government.

By entering the industrial electronics business, Horne said, the division will have more flexibility in the use of personnel.

Data processing, the use of high-energy acoustical power, school sound systems, intercom and public address systems are a few fields he mentioned meriting more attention.

★ ★ ★

Executive appointments, many of them new only in titles and responsibilities, were made this week for General Dynamics/Electronics in Rochester by Charles F. Horne, president.

Reporting directly to Horne will be:

Sidney R. Curtis, a veteran of 37 years with GD/E and its predecessor, Stromberg-Carlson, as vice president for plans and programs.

Dr. Nisson A. Finkelstein, director of research at GD/E since 1959, as vice president for research and engineering.

Arthur J. Hatch Jr. in the same position he has held for the past two years, as vice president for commercial products.

Roy W. Jones, former director of manufacturing, and having 20 years of experience in production in the Telecommunication Division, as director of operations.

Robert D. Gray, with seven years experience in engineering and program direction, as director of quality control.

Arthur E. Linkins, in the same position as director of contracts to which he came in early 1960.

Frederick L. Gagnon, with 13 years' experience as an electronics engineer, project director and program manager, as program director.

Wayne K. Bright, former controller of the Military Products Division, as controller.

Kenneth R. Harkins, a member of GD/E legal staff for the past 18 months, as division counsel.

David S. Cook, with a record of 20 years in advertising, sales promotion and public relations with GD/E and Stromberg-Carlson, as assistant to general manager.

Robert J. Gilson, former general manager of Military Products Division, as special consultant to the president and general manager.

Breakthrough Achieved In Metal Joining For Future Space Vehicles

A breakthrough which may prove of paramount importance in construction of space vehicles of the future has been achieved by a group of General Dynamics researchers.

Sections of tungsten have been joined successfully at low temperatures in the materials laboratory at General Dynamics/Convair. The feasibility project, originated by GD/Astronautics applied manufacturing research and process development, (Dept. 290), stretched over a six-month period of experimentation to result in, what may be, the first successful attempt of its kind.

"Such low-temperature joining of a refractory metal (metal of high strength at high temperature) has, to our knowledge, never been done before," said L. B. Ziffrin, Astro senior manufacturing research engineer, who initiated and directed the project.

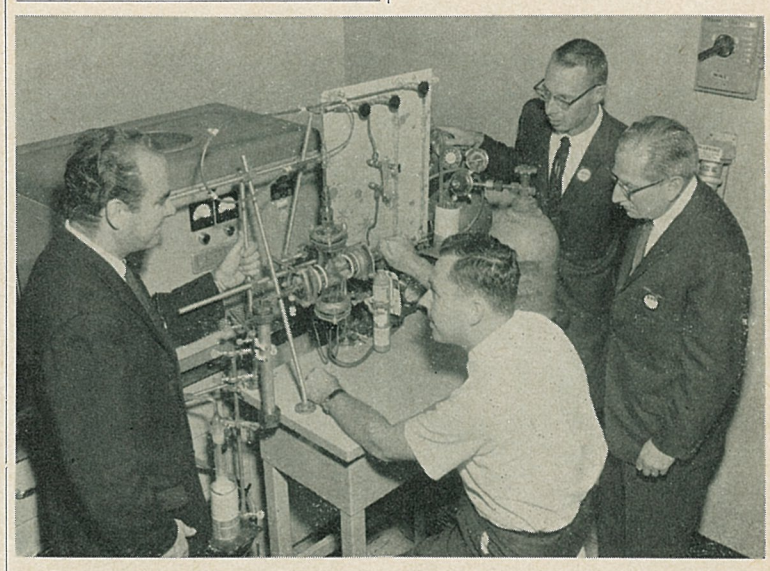
"All of the metals which will be used to build high-speed craft and missiles to withstand the extremely high temperatures generated by fantastically high speeds and stresses in outer space, have, by their very nature, extremely high melting points (i.e., melting point of tungsten is 6,170 degrees F.)," explained E. E. Keller of materials lab. "When sections of such metals are joined at fusion point, there is great risk of damage to the metal.

"A method of low-temperature joining, or low in comparison with the metal's melting point, had to be found to prevent recrystallization of the metal and to eliminate buildup of thermal stresses which cause the metal to break or wrinkle."

Keller, who was in charge of developing experimental apparatus and procedures, said that the method finally evolved after months of research, centers around use of concentrated induction heating to 1,100 degrees F.

Air is evacuated from the test chamber in which tungsten sections are clamped; a mixture of hydrogen and tungsten hexafluoride in gaseous form in directed through a nozzle to deposit the tungsten, reduced to metal by the concentrated heat, on to the joint.

Dr. V. A. Favati, Astro senior manufacturing research engineer, was coordinator; Dr. O. E. Myers of GD Scientific Research, consultant.



SUCCESSFUL—General Dynamics team responsible for scientific achievement in joining refractory metals gathers around test setup. From left, Dr. V. A. Favati, Astro Dept. 290; E. E. Keller, materials lab located at GD/Convair (seated); Dr. Orlo E. Myers, GD Scientific Research; Lou Ziffrin, Astro Dept. 290.

Early Missile Research Sparked By Need to Combat Suicide Raids

(Following is No. 73 in continuing history of General Dynamics products, completing account of development of delta wing that led to F-102, F-106 and B-58 aircraft.)

Next to delta-winged aircraft, Convair's most important military production by the mid-50s was missiles.

Derived from early research at Vultee Field, Convair's first venture into the field of guided missile stemmed from a Navy project to find an answer to Japanese "kamikaze" suicide plane tactics.

Studies made in 1944 pointed to an ideal anti-aircraft weapon which would be capable of homing on piloted aircraft. The Bureau of Ordnance early in 1945 enlisted the help of the Applied Physics Laboratory of Johns Hopkins University.

In an early application of what is now called the "weapon system concept," BuOrd assigned overall technical direction to APL (which had made its mark in development of the proximity fuse). APL selected associate contractors in many fields: pure research, electronics, explosives and the like. Convair was picked to carry principal airframe responsibility, and had a collateral role in the ramjet burner development.

Vultee Field worked on two types of airframe: a controlled test vehicle (CTV) of a subsonic speed for testing stabilization and controls tied to a Bendix beam follower, and a supersonic vehicle (STV) for exploring the aerodynamics of faster-than-sound flight. Both were powered by solid-fuel rocket motors.

CTV (called Gnat) progressed swiftly. Engineering began releasing orders to the shop the first week in June, 1945, and the initial unit was shipped to APL June 29.

Successful firing (meaning it remained airborne over its expected trajectory) followed on July 2. Gnat's velocity was 800 ft./sec. with an endurance of 13 seconds. By June, 1946, Gnat followed a radar beam (slow). Testing was discontinued before all of approximately 90 CTVs had been expended.

Development of STV (called Snoot) came along more slowly. Information was sent for calculating supersonic loads and drag.

Dr. A. G. Mitchell of APL participated in conferences at Downey in July, 1945, where C. R. Irvine, Vultee Field chief engineer, and his staff roughed out the configuration "on the back of an envelope."

Analysis of aerodynamic data was completed in August and the first missile was sent to APL in October. It was fired at Island Beach, N. J., with results typical of the art in 1945: "The missile tumbled immediately after launching and hit the ground 200 yards from the launching site . . . exact cause has not been determined."

After minor modification the second missile was fired with what might be termed 100 per cent improvement—it travelled some 400 yards before touching earth. Missile No. 3 was launched with moderate success in January, 1946, at the new Naval Ordnance Test Station near Inyokern, Calif., and by March a "fully successful" firing heartened engineers.

Slowly, painstaking development continued into the summer of 1948; through some STV-1s through the STV-2 series (first fired in August, 1947) and the early STV-3s (first fired April 8, 1948).

In a spectacular breakthrough, the contracting team solved the aerodynamic and control problems so well that BuOrd and APL decided to convert STV-3 into a tactical weapon without waiting for perfection of the ramjet motor. Thus, Terrier was born.

Flight Rating Tests Completed On Centaur's Rocket Engines

Completion of preliminary flight rating tests on this nation's first liquid hydrogen rocket engine, which will power the General Dynamics/Astronautics Centaur launch vehicle, has been announced by the National Aeronautics and Space Administration (NASA).

The engine, the RL-10 (formerly called XLR-115), was put through 20 captive firings in just five days. Conducting the test was the engine developer, Pratt and Whitney Division, United Aircraft Corp.

All firings were conducted under simulated space conditions with the engine consistently producing its rated 15,000 pounds of thrust.

Two RL-10s will be used in powering the Astronautics designed and produced Centaur space vehicle. NASA indicated Centaur is slated for its first flight test "in the next few months."

Development of this engine dates back to October, 1958. Since that time 700 firings were held for an accumulated time in excess of 60,000 seconds, NASA indicated. Recently, firings were accelerated to about 70 per month.

Twelve RL-10s have been delivered to the High Thrust Test Area, Edwards RS, to NASA's Lewis Research Center, to GD/Astronautics and to Douglas Aircraft for further testing prior to launching both Centaur and Saturn space vehicles from Cape Canaveral, Fla.

Fueled by liquid hydrogen, (boiling point is minus 423° F.) the engine is designed to provide a capability of multiple restarts in space with "coast" periods of many hours between firings.

MacBride and Loomis Leave Gen. Dynamics

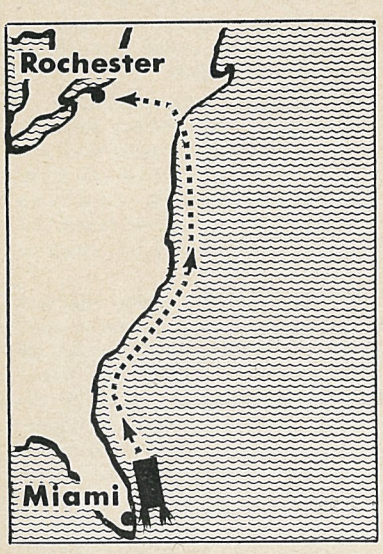
Resignations of two General Dynamics executives—C. Rhoades MacBride, executive vice president, Western Group, and Robert C. Loomis, president of GD/Convair — were disclosed last week.

Loomis has accepted a position as president and chief executive officer of American Electronics, Inc. of Fullerton, Calif. He had held executive posts at Pomona and San Diego for 14 years.

MacBride came to San Diego from New York early this year. He had been with General Dynamics since 1958.

Seneca as 'Deepest Lake' Challenged; Crater in Oregon Merits the Title

Following is a letter by a former General Dynamics/Convair and Astronautics employee who is both a close reader of General Dynamics NEWS and a student of geography.



ROUTE — Sketch shows route taken from Florida to Seneca Lake, near Rochester, N.Y. (via Hudson River) by barge which GD/Electronics will use in anti-submarine warfare research.

"Dear Editor,

"In reference to your story in the Nov. 8 issue, you identified Lake Seneca in the 'GD/Electronics Barge will do ASW Research,' story as 'by far the deepest of any U.S. lake other than the Great Lakes.'

"You are way off.

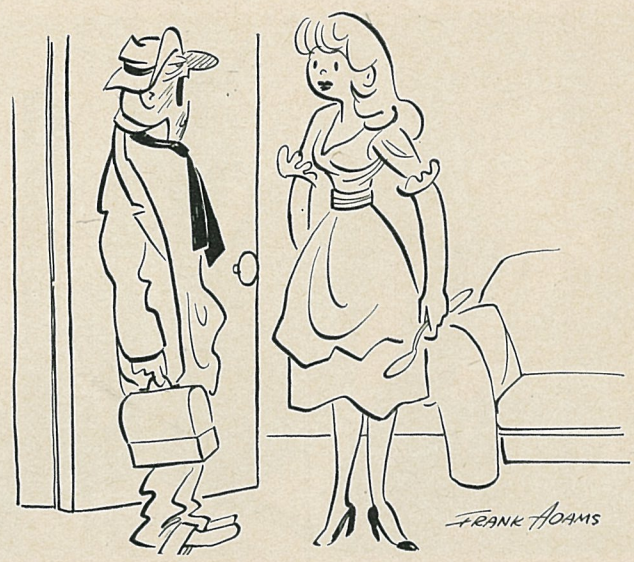
"I'm positive Lake Chelan, Washington is 2,100 ft. deep, Crater Lake, Oregon, 2,200 ft. deep and Lake Tahoe, California, about 1,200 ft. in depth.

"Check this and I'm sure you will find all these bodies of water are deeper than Lake Seneca.

Garland Mitchell
San Clemente, California

"P. S.: Seneca may be the only lake accessible to this barge."

Editor's Note: You are right. Not only Chelan (1,000-1,500 ft.), Crater (1,996 ft.) and Tahoe (1,650 ft.) qualify as deeper, but the Pend Oreille, Idaho, (1,158 ft.) would also join this group. Qualifying phrase "that has direct access to Atlantic Ocean" was omitted from original story.



"All of us in the back seat lost control of the car . . . the driver stopped at every bar on the way home . . ."

Contract For Unit of Mauler Awarded to Canadian Concern

A contract for $1.7 million for production development of an infrared acquisition unit for the Mauler missile system has been awarded to a Canadian firm, according to a recent announcement in Washington, D. C.

The United States and Canadian governments jointly announced award of the contract—the first cooperative development of a missile system between the two governments—to DeHaviland Aircraft Corporation of Canada, Ltd., Downsville, Ontario. The contract was awarded through the Canadian Department of Defense.

Mauler, the U. S. Army's newest air defense missile system under development, is designed to destroy enemy supersonic aircraft, short-range ballistic missiles and rockets in a battlefield area.

The U. S. government through the Detroit Ordnance District will share the cost of the development program with the Canadian government.

The Army Rocket and Guided Missile Agency, an element of the Army Ordnance Missile Command at Redstone Arsenal, Ala., has overall charge of Mauler development and will provide technical supervision.

Technical guidance will also be furnished to DeHaviland by General Dynamics/Pomona, prime contractor for the Mauler system.

All development work on the Mauler infrared acquisition unit will be performed in the DeHaviland plant in Toronto, Ontario.

Halsey Appointed Acting Night Mgr.

W. D. Halsey, assistant factory manager, has been assigned as acting night manager by President Frank W. Davis at GD/FW.

Halsey's appointment is a continuation of the management training program, in which various department heads are assigned, on rotation basis, to serve as temporary night manager.

Advanced Products Dept. Expanded at San Diego

Rapidly expanding Advanced Products Department of General Dynamics at San Diego now boasts 176,000 sq. ft. in total area after recent completion of a 7,800-sq.-ft. wing for the mechanical section.

Consolidation of Advanced Products' two sections, chemical and mechanical, was facilitated when the original two-story building opened last year.

R. G. Monsees, general manager, said "the versatile facility promotes the necessary division of activity within the department, essential for safer and more lucrative research."

Housing for mechanical (formerly known as Dynapak) section's engineering, sales and administration has been provided by the low-flung, rambling wing.

Installation of the "701" telephone switchboard has directly connected Advanced Products with GD/Convair. In operation less than a month, the "701" has a capacity of 2,000 outlets.

Concurrently, the second floor of the chemical section is being converted to laboratories.

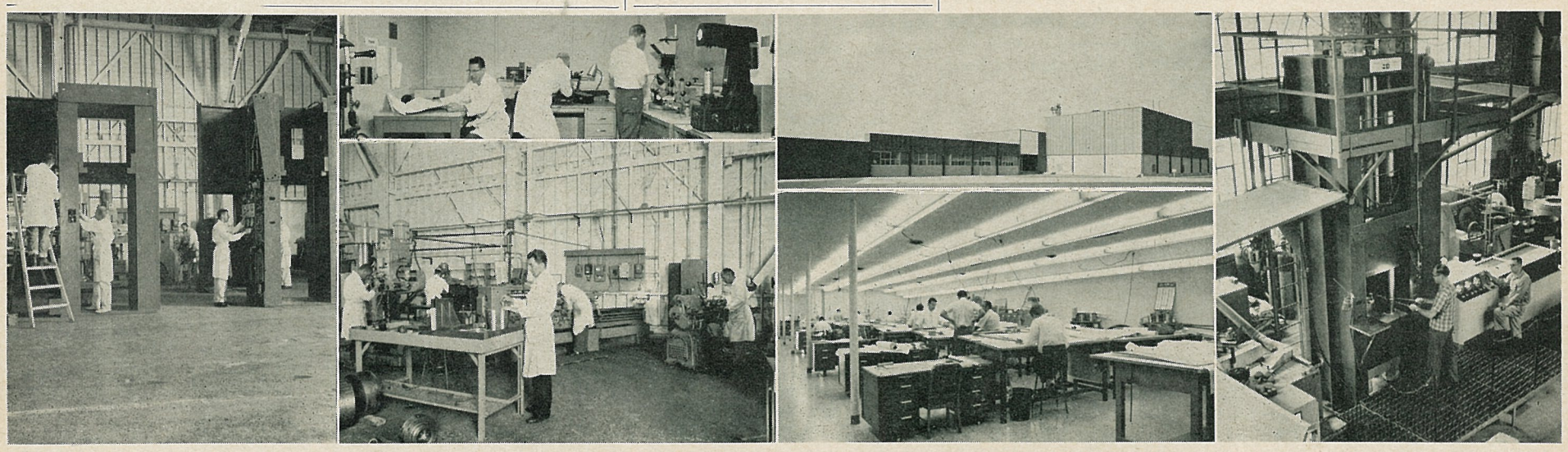
Separated from mechanical section by a firewall, chemical section's total floor area, including pilot plant, is 7,936 sq. ft.

Located on GD/Convair SD ramp, Advanced Products will receive a decisive experimental boost when a one-million pound capacity testing pad, under construction at GD/Astronautics, is completed.

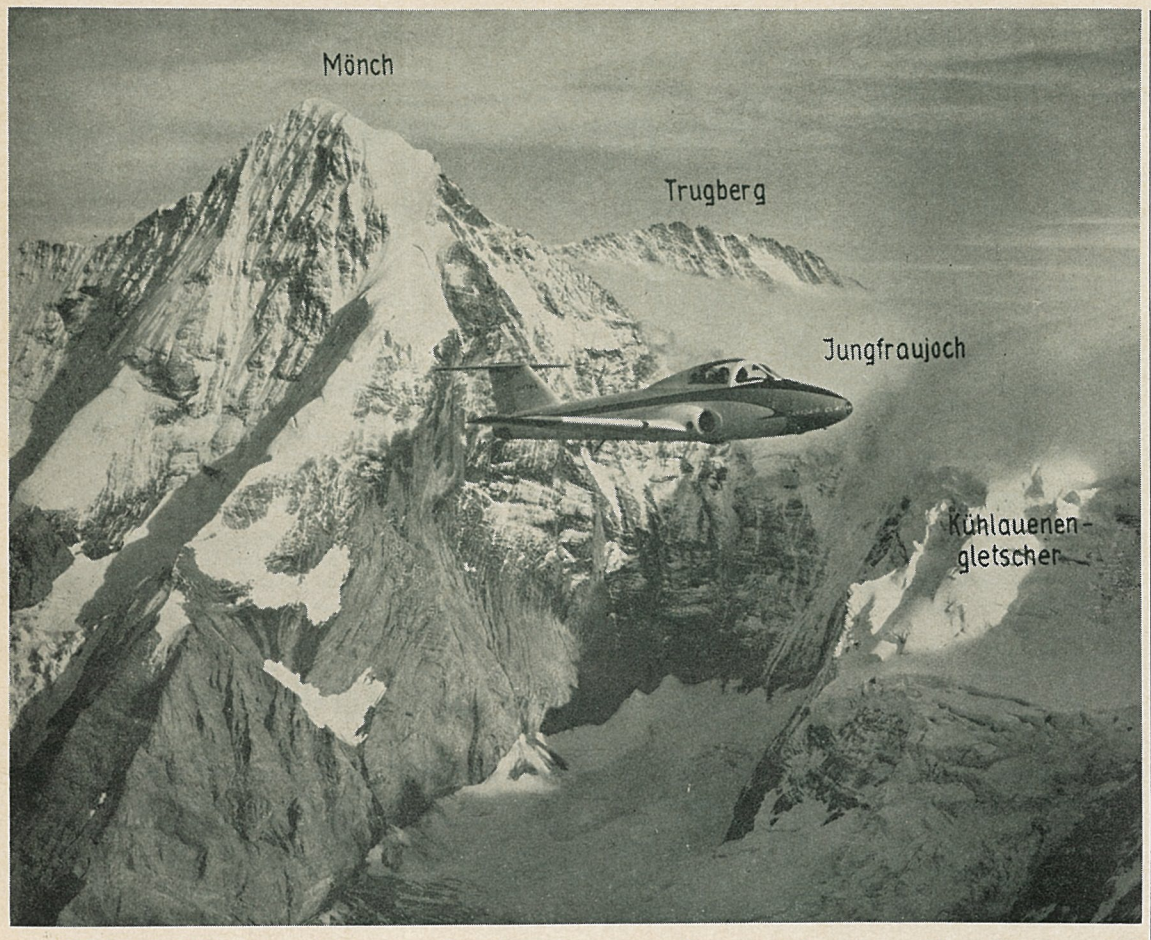
Included in Advanced Products' rehabilitation activity was the recent renovation of Bldg. 37, mechanical section's parts, tooling and assembling area.

Home of "Dynapak," high-energy rate forging machine, and the new "AP-Resin-XHU," a multi-purpose chemical solid, Advanced Products employs 150.

"As the only producer of a high-energy rate machine which can point to actual production capability and with the expected marketing potential of "AP-Resin-XHU," the potential here is unlimited," Monsees said.



EXPANSION—General Dynamics' Advanced Products Department at San Diego, which recently completed new wing, is shown above. Expanded facility is divided between mechanical and chemical sections. Largest vertical Dynapak machine in production (right) is pictured at American Brake Shoe Co. Engineering department in new wing (bottom right), Dynapak prototype lab (bottom left), metallurgical laboratory (top left) and Dynapak assembly (far left) are among facilities.



OVER THE ALPS—Canadair's trim CL-41, jet trainer, is shown cruising above Alps while on recent demonstration visit to Europe. Photo was shot from Swiss Air Force plane. Royal Canadian Air Force has ordered 190 of these ships as most modern trainer on market.

High Speed Teletype System Links All Dynamics Divisions

General Dynamics/Astronautics Division's private wire teletype communication network will merge next month with the General Dynamics Corporate system, resulting in a considerable overall financial saving as well as increased efficiency of service to all Dynamics divisions.

The Astro network was created originally for logistics support to Atlas missile off-site bases under construction in far-distant parts of the country. The same, or improved, logistics service will continue via the expanded system.

R. E. Bennis, corporate coordinator of wire communications, reported that as the two systems are identical Western Union Telegraph Co. type 111-B installations, virtually no difficulty is anticipated in the consolidation.

There will be three switching centers, located in New York, Fort Worth, and San Diego. Fanning out from these are direct lines to key points, such as Rochester, Montreal, Washington, Chicago, Atlanta, St. Louis, and Wichita, Nashville, Dayton, Albuquerque, and Los Angeles.

Messages to points not served by direct lines will go to the closest switching center and then be refiled via regular Western Union facilities, at a cost substantially less than a commercial telegram.

Consolidation of the systems is expected to account for approximately $100,000 a year in savings, much of it by elimination of parallel service.

Actual message-sending procedures for individuals will continue much as in the past. For example, messages will go by teleprinter from Astronautics home plant in San Diego to the switching center in the basement of Bldg. 19 at San Diego, and thence out over the network to destination. Once the message is "cut" on tape at the originating teleprinter, transmission becomes almost immediate.

The main objective in all three switching centers is to maintain a "no backlog condition." That is, messages are relayed through the centers to destination points with an absolute minimum of delay.

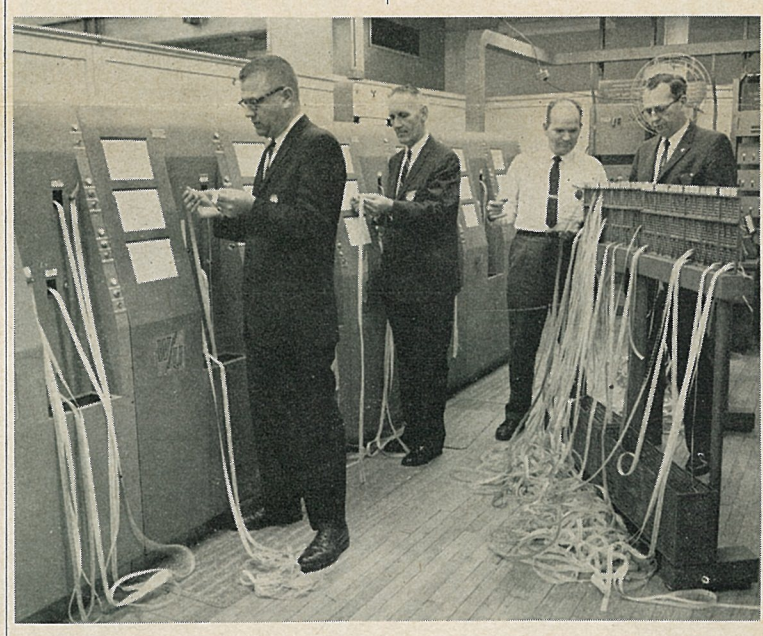
The system totally involves about 16,000 miles of leased lines. Main trunk lines process messages in two directions simultaneously at 100 words a minute.

JOHNSON NAMED TO AIA BOARD

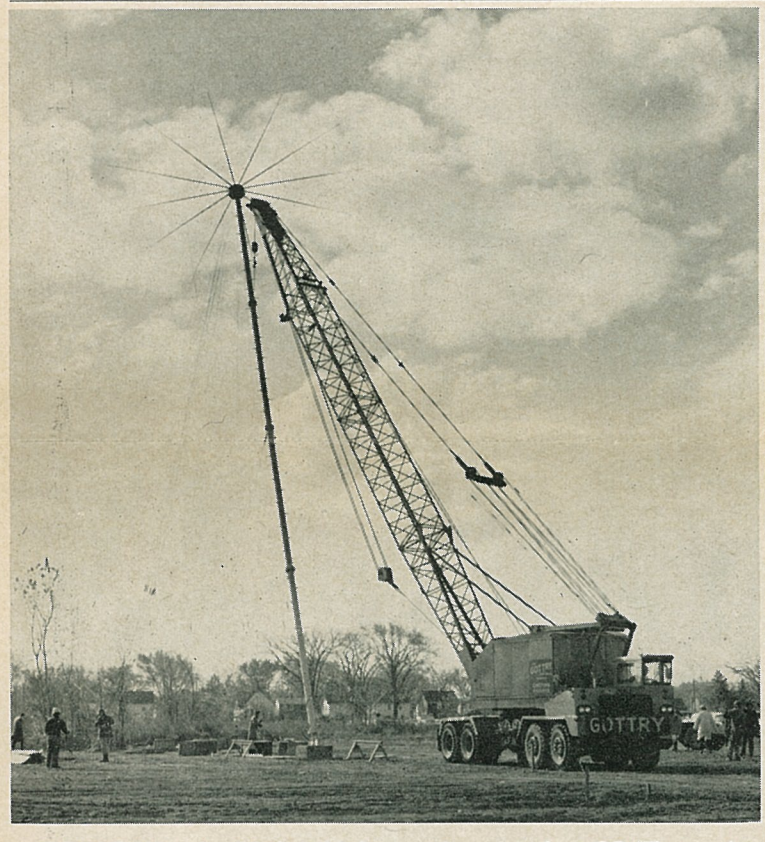
Earl D. Johnson, president of General Dynamics Corporation, has been named to the board of governors of Aerospace Industries Association for 1962.

Johnson joins a select group of administrators of the nation's major manufacturers of airplanes and aerospace vehicles forming the governing body of the association.

August C. Esenwein, formerly of General Dynamics, was elected president for the coming year.



TICKER TAPE—Inspecting GD/Astronautics' switching center in San Diego are, from left, R. E. Bennis, corporate coordinator of wire communications; R. I. Morse, office services manager at San Diego corporate offices; W. W. Welton Jr., GD/Astro assistant supervisor, product support; and K. R. Aiken, GD/Astro logistics support manager.



GOING UP—An 80-foot-high mast is erected at GD/Electronics, Rochester for testing military communications equipment being built for U. S. Air Force.

Avoid Rush Mail Hours

In an effort to better distribute the mail handling burden during the day, U. S. Post Office authorities throughout the country are requesting that users avoid the rush period of 4:30 to 7 p.m. for all but the most important mail.

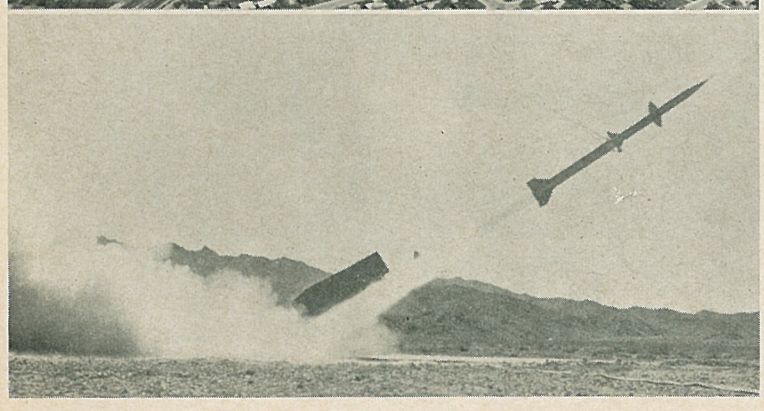
"About 70 per cent of the mail reaches the post office between those hours," R. I. Morse, office services manager at the San Diego corporate offices, reported. "Post offices are endeavoring to shift part of this load to the morning hours to more efficiently use their staffs."

Morse urged General Dynamics mail users, particularly during the Christmas season, to mail as much as possible during the forenoon. Their mail will be moved faster and more efficiently, he said. The appeal is part of steps taken by Dynamics to cooperate in the "Nation-wide Improved Mail Service" program of the U. S. Post Office.

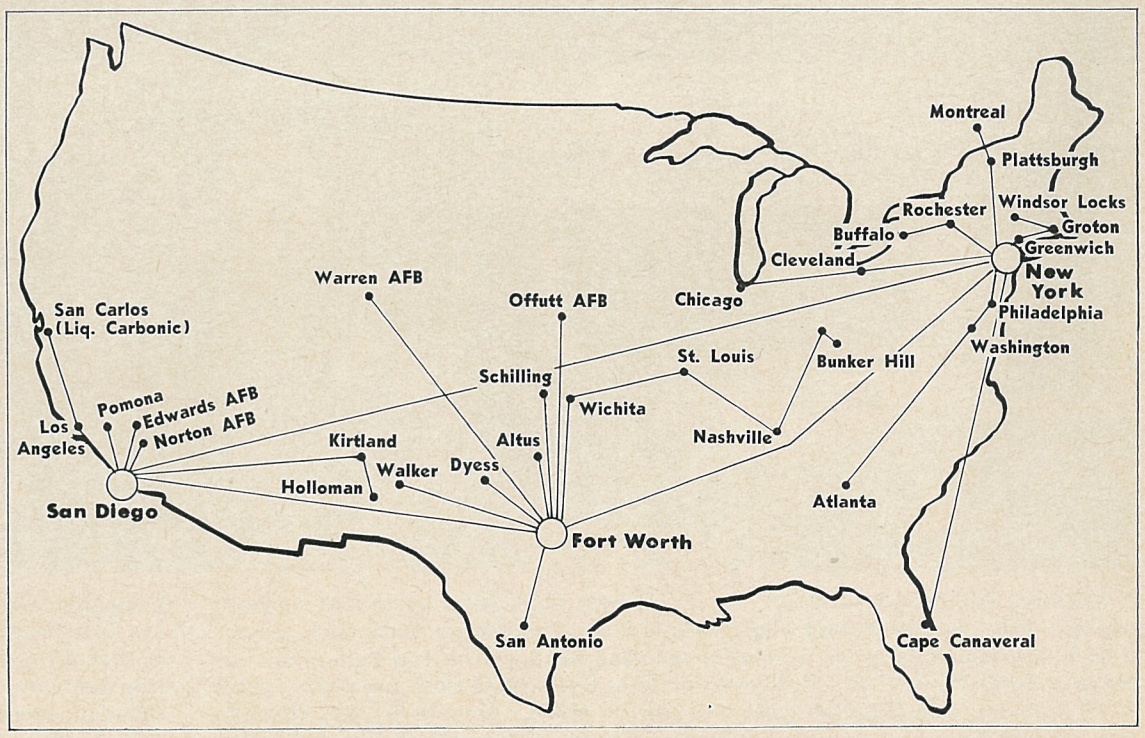
Commander Named To Bomb Squadron

Lt. Col. Joseph Schreiber has been named commander of the 63rd Bombardment Squadron at Carswell AFB. The 63rd is recognized as the world's first tactical supersonic bombardment squadron equipped with the Mach 2 B-58 Hustler. Dynamics builds the B-58 at Fort Worth.

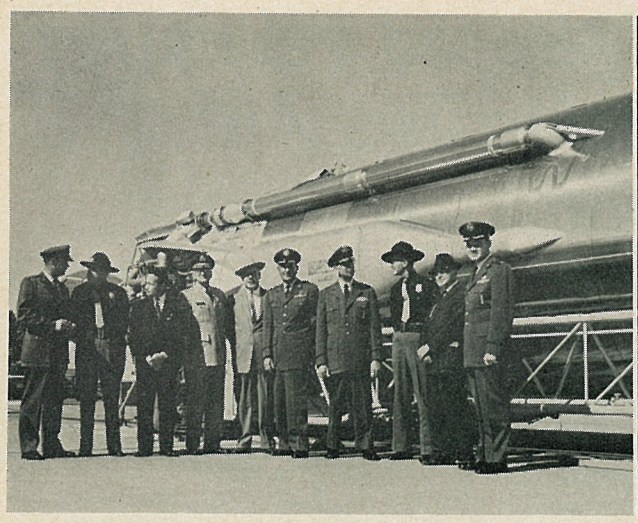




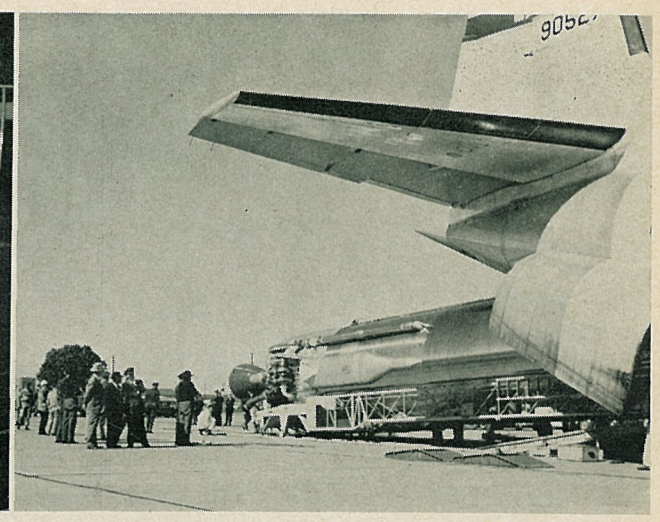
TERRIER AND "HOME"—In upper photo is General Dynamics/Pomona plant at Pomona, Calif., where Terrier and Tartar missiles are built. Below, Terrier takes off during desert maneuvers of U.S. Marine Corps' First Medium Anti-aircraft Missile Battalion. Approximately 6,500 are employed at Pomona plant. Known as Naval Weapons Industrial Reserve Plant, it is operated by Dynamics for Bureau of Naval Weapons.



FAST AND FAR—Map illustrates General Dynamics Corporation's communications network as it will be when merged with GD/Astronautics Division's system. New York switching center will serve 20 stations, Fort Worth 25 and San Diego 40.







GREETINGS—Arrival of first "F" series Atlas at Lincoln AFB was occasion for festivities. At left are Col. T. G. Carbin, USAF; Col. C. G. Sanders, Nebraska Highway Patrol; E. B. Newton, GD/Astro operations manager; Maj. Gen. L. H. Welch, Nebraska National Guard; J. Carroll, Lincoln police chief; Lt. Col. W. Disanna, deputy base commander; Col. V. L. Hastings, SATAF commander; Capt. D. Casey, Nebraska State Highway Patrol; D. Bowen, Lincoln mayor; Col. E. P. Denton, commander, 551st SMS, in front of arriving "bird." Center photo was during morning coffee break hosted by Astro including Col. Hastings, Maj. Gen. Welch, Newton, Col. G. R. Buckey, deputy division commander for materiel, and Col. Sanders. At right guests watch as Atlas is gently removed from C-133B transport.

Astro Skiers Form Club

PLATTSBURGH AFB — GD/Astro Ski Club here met recently at Gran-Vue Lodge for a "kick-off" gathering which featured guest speakers from Plattsburgh's Viking Ski Shop and the Clinton County Ski Council.

Also on the agenda were discussions of club events, presentation of emblems, and introduction of club committees.

Co-commissioners of the group are Barbara Wallace and John Oldenkamp.

Arrival of First Atlas 'F' at Lincoln Occasion For a Rousing Welcome

LINCOLN AFB — Civic, military and Atlas contractor personnel formed a special welcoming committee here recently when the first Atlas "F" missile destined for operational sites here arrived.

Flying aboard a giant C-133B "Cargomaster" turboprop, the Atlas touched down after a delivery flight from San Diego.

Hosting the affair were: Col. Vernon L. Hastings, SATAF commander; Col. Thomas G. Corbin, commander, 818th Air Division; Col. Edward P. Denton, commander, 551st Strategic Missile Squadron; and Earl B. Newton, General Dynamics/Astronautics operations manager here.

Astro officials hosted a morning coffee at Lincoln AFB Officers Club prior to unloading.

Twenty-five ranking city and state officials were present. Nebraska Governor Frank B. Morrison was forced to cancel a scheduled participation, but was represented by Maj. Gen. L. H. Welch, Nebraska National Guard.

Guests witnessed the unloading operation and saw the Atlas towed away to its first stop at a nearby Missile Assembly Building (MAB) being added as part of Atlas facilities locally. Final assembly and checkout of all component parts will be accomplished at the MAB prior to assignment of the missile to one of the underground silo launch complexes being built in support of this base. Costing almost $1 million, the MAB was completed early this summer.

Dyess Nurses Gather For Social Evening

DYESS AFB—GD/Astro nurses here gathered for a social evening at the home of Bonnie Allen recently.

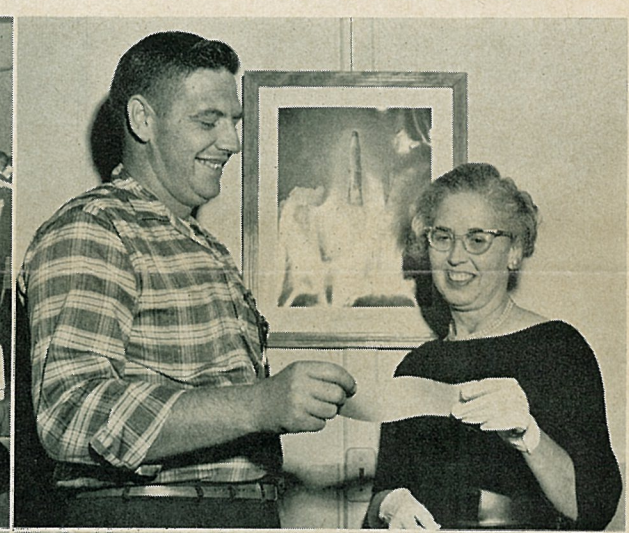
The nurses relaxed with a bingo game and refreshments.

Attending were Rosemary Jones, head nurse, Joyce Maxam, Frances Klahn, Margaret Horton, Ann Burt, Bess Benson, Gretchen Wilson, Jo Ann Stovall, Helen Chaney, Melba Pharr, Peggy Robberson, Kay Marshall, Ora Dean, Bonnie Allen (hostess), and Virginia Hackney (social chairman).

Astronautics Wives Figure Prominently in News of Off-Site Bases



















AROUND THE BASES—Top left: Ray C. Harbert, right, Astro operations manager at Dyess AFB, presents framed Atlas photo to Ralph Yarborough, senior U.S. senator from Texas. Senator was in Abilene for speaking engagement. Top center: this was scene at Astro Wives Club's Halloween party at Dyess NCO club. Top right: Astro's J. H. Seymour, Con-Trib-Club committeeman at AFMTC, presents $1,000 check to Mrs. William Herrmann, president of Brevard County Unit, American Cancer Society. Center, left: GD/Astro men at Cape Canaveral recently reported for executive development class. From left are Jack Smith, Paul Dudney, Ken Taylor, Frank Waitkus, Dr. Charles Irvin, instructor; Robert Flanagan, Jack Lennon, Robert Goldinger. Center, middle: at another session of class were Dr. Irvin, L. T. Kaminski, Les Cole, Roger Lynch, J. E. Ransom, John Swigart. Center, right: playing key roles in GD/Astro Wives Club at Altus are Mrs. Herman Hardaway, seated center, president; Mrs. L. D. Brown, first vice president, seated at left; and Mrs. D. G. Daindon, secretary. Behind them are Mrs. Joe Campbell, board member, and Mrs. J. R. Gillilan, auditor. Lower left and lower right are winners at breakfast-bridge sponsored by Astro Wives Club at Cape Canaveral. Lower center, from left, Mrs. Les Stockton, vice president; Mrs. Eugene Pitzer, secretary; Mrs. Don Grundstrom, president; Mrs. Richard Adams, treasurer, of Astro Wives Club at Lincoln AFB.

Schilling Personnel Plan Xmas Dance

SCHILLING AFB—A Christmas dance for all GD/Astro sub-contractor, associate contractor and SATAF personnel will be held at Avalon Ballroom here Dec. 23.

Glenn Horner and orchestra will play for dancing from 9 p.m. until 1 a.m., and door prizes will be awarded every half-hour. There is no admission charge, and dress will be informal.

Astro Beauty Is Runner-up

LINCOLN AFB—A General Dynamics/Astronautics wife, June Adams, recently completed four days of events which led to her selection as runner-up in the annual "Mrs. Nebraska" contest.

June, wife of R. H. Adams of Dept. 616-7, also received a second trophy for preparing the most nutritional lunch.

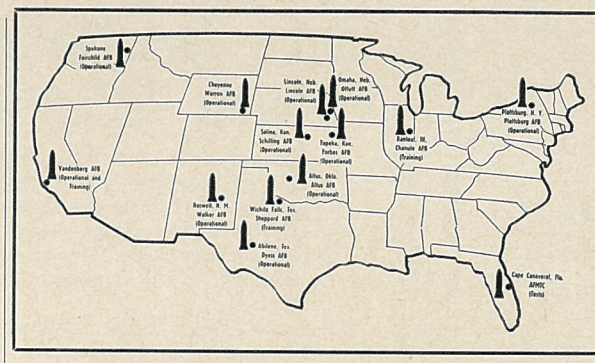
Held at the Center Arcade, Omaha, the contest found participants fixing meals, baking cakes, packing lunches, restyling their hair, sewing and writing essays on Savings Bonds and home modernization. To top it off each gave a speech on a favorite hobby.

Judges also considered such points as poise and aptitude.

Winner of the event earned a two-week vacation at Ft. Lauderdale, Fla., where she will compete in the annual Mrs. America contest.



RUNNER-UP — June Adams, wife of GD/Astro's R. H. Adams of Lincoln AFB, was runner-up recently in contest to select "Mrs. Nebraska." Competition included cake baking, sewing, hair styling.



OFF-SITE NEWS

GENERAL DYNAMICS NEWS CONTACTS

AFMTC—P. C. Brown, ext. 3-4741.
ALTUS—John Lockwood, ext. 7141.
DYESS—G. D. Higgins III, ext. 8370.
EDWARDS RS—Chris Marques, ext. 27.
FAIRCHILD—C. C. Clickner, ext. 5596.
FORBES—Jane Cordner, ext. 4514.
LINCOLN—Maxine Utley, ext. 412.
PLATTSBURGH—Kenneth Emery, ext. 6242, 6243.
SCHILLING—D. J. Rahlfs, ext. 213.
SHEPPARD—Steve Delbridge, ext. 8243.
VANDENBERG—Lucy Signorelli, ext. 8-5046.
WALKER—Rod Bricker, ext. 603.
WARREN—Alice Watters, ext. 73-716.

All-Dynamics Archery Tourney To Include East, West Divisions

Plans for an all-General Dynamics archery tournament which will include participants from both western and eastern divisions and facilities are under way at GD/Convair.

Spearheading the drive to gain Corporation-wide participation for this unprecedented bowing venture is CRA Commissioner Al Phipps.

Phipps said present plans call for staging simultaneous tourneys all over the country with results mailed to San Diego.

"Not only will this help to draw persons from all the divisions closer together, but it will pit some of the nation's top archers against each other." Phipps commented.

GD/Convair's archery club includes bowmen of such prominence as Roy Dill, former national champion and California state champ for four years.

"We hope to kick this thing off about the first of the year with results mailed to GD/Convair and team standings published periodically in General Dynamics NEWS," Phipps said.

Various classes of competition depending on age and ability will be established so that both beginners and experts will have a chance to compete for prizes.

"We are particularly interested and desirous of the eastern divisions joining with us in making this shoot a success."

Phipps asked for a "show of hands" in the form of letters from other division commissioners or groups interested in competing.

Additional information can be obtained by writing: W. A. Phipps, 2318 Upas St., San Diego 4, Calif.

Executive Seminar Convened at Cape

CAPE CANAVERAL—It was "back to school" recently for 19 key General Dynamics/Astronautics men here who attended a week-long Executive Development Seminar.

Students took part in daily two-hour lectures covering a wide variety of subjects related to management and personnel.

Instructing was Dr. Charles Irvin, noted consultant to management.

Attending were Jack Smith, Paul Dudney, Ken Tayler, Frank Waitkus, Robert Flanagan, Jack Lennon, Robert Goldinger, L. T. Kaminski, Les Cole, Roger Lynch, J. E. Ransom, Jim Swigart, Frank Haffey, Don Larson, Jack Moline, Clint Moore, R. H. Nicholson, T. J. O'Malley and M. Talbert.

Sessions were conducted in the base manager's conference room.

HOLIDAY SCHEDULE FOR YEAR-END SET

Most divisions of Dynamics including Astro off-site bases will enjoy two four-day weekends during the holiday season.

Holiday schedule this year will be Dec. 25 and 26 and Jan. 1 and 2.

The same dates apply to GD/Convair, GD/Electronics, including Information Technology facilities, GD/Astronautics plants at San Diego; off-site bases; and GD/Pomona.

Employee Council Organized At Dyess For Base Recreation

DYESS AFB — Formation of an Employees' Council for Astronautics Recreation Association here is paving the way for a full-scale recreational program at this Atlas base.

Al Striplin was named council president and will work with Dub Polson, employee services representative, in formulating plans.

Four ARA activities are in action with commissioners named. Commissioners, their activity and telephone extension are: George Bennett, basketball, ext. 750 at the Shep site; H. P. Vanderweide, bowling, ext. 312; Wally Mead, golf, ext. 8320; and Jack Owens, softball, ext. 619.

Bennett has asked players and coaches interested in basketball activities to contact him immediately so teams may be organized in time to participate in base leagues.

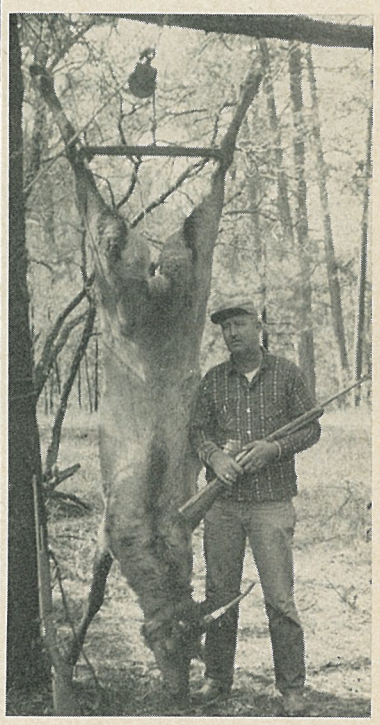
In the "works" at this time are plans for a post-holiday dance to be held at the Dyess Officer's Club.

Meanwhile, individuals or groups desiring to start other ARA-sponsored activities are invited to contact Polson, ext. 133, or Striplin, ext. 147, for assistance.

Lincoln Supervisor Honored in Auburn

LINCOLN AFB—Martin Valadez, GD/Astro electrical supervisor at Site 3 here, has been lauded for his work in his hometown of Auburn, Neb.

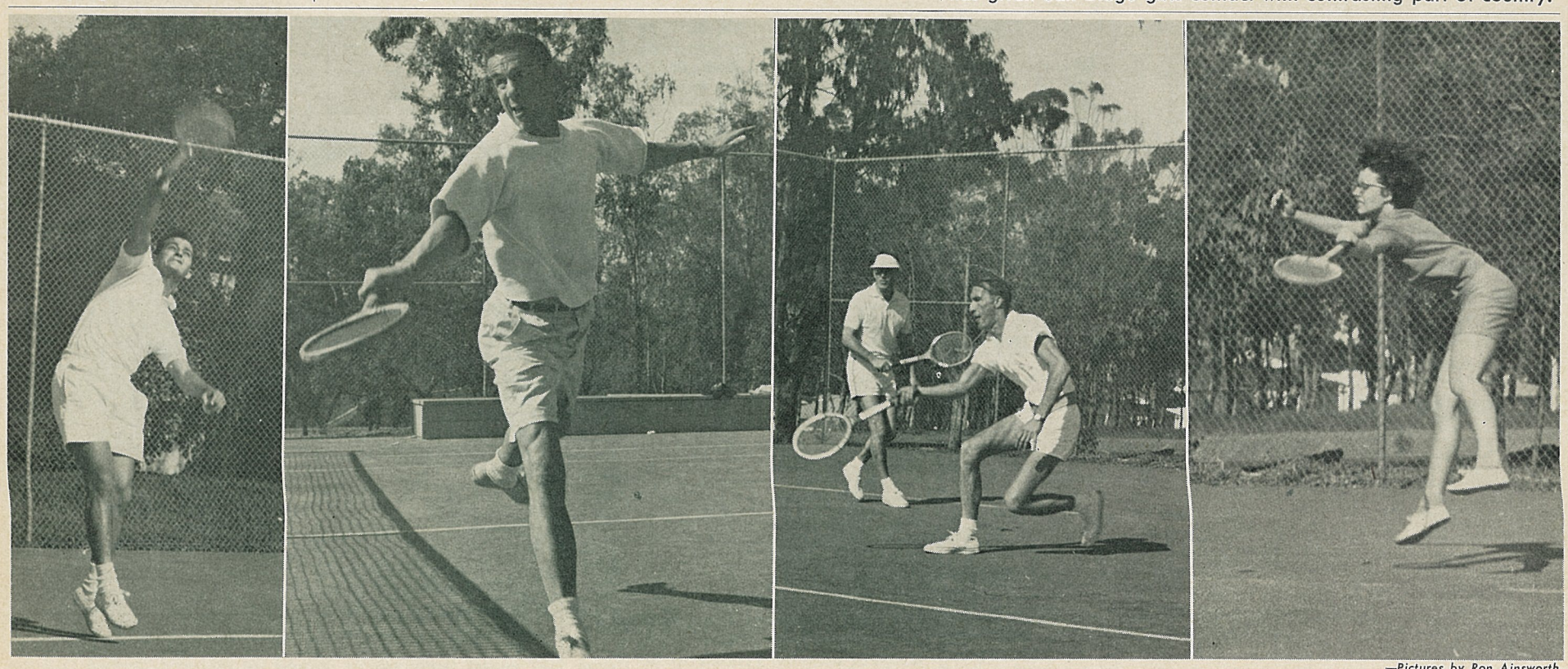
Valadez doubles as scoutmaster of Boy Scout Troop 321.



FREEZER FULL — Among successful GD/Astro nimrods this season was F. J. Crownover, traffic dispatcher at Altus AFB. He bagged this 800-pound elk while hunting at Pegosa Springs, Colo.

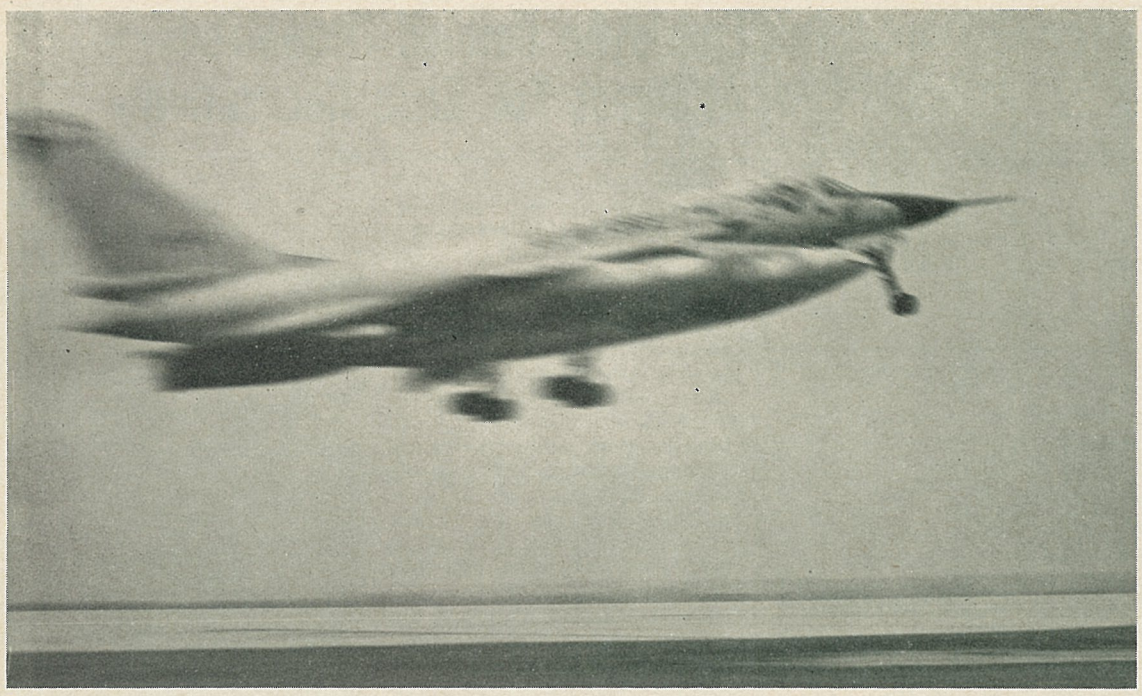


COTTON PICKIN'—Diane and Vicki, daughters of Aron Marcom, Astro assistant supervisor at Altus AFB, snuggle down gleefully in cotton near Atlas off-site base. Father's assignment to Oklahoma has given San Diego girls contact with contrasting part of country.



—Pictures by Ron Ainsworth.

SMASH—Fred Balata (left) serves in CRA tennis tournament at San Diego played at Morley Field Nov. 18. Balata joined lunging Dean Whitney (second from left) as two of four turkey winners. Barney Campbell and Dale Pline (second from right) are caught in doubles volley and Merilyn Beyrer (right) goes "airborne" to return a cross-court. Tourney was first of reactivated CRA Tennis Club and served as warm-up for doubles tourney slated between GD/Convair and GD/Astro Dec. 16.



ALL-WEATHER—Tactical B-58 Hustler streaks skyward through fog and mist on another simulated combat sortie from base at Carswell AFB, Fort Worth.

Sharpshooting Cameras Answer 'Elbow Room' Questions in B-58

How much "elbow room" does an airman need to operate safely inside a B-58 escape capsule? Precisely where should critical equipment be placed, assuring the Hustler crewmen maximum safety and comfort in flight and during high-speed ejection?

These and a host of other thorny questions were answered by pioneering General Dynamics/Fort Worth engineers before the first production capsule—now being static-tested—could be assembled.

Prime consideration had to be given both to the airman's size and body attitude during positioning for ejection.

"We had to figure a way to measure the distance of various body parts during a few vital postures," said John W. Chaffee, senior design engineer who holds a degree in physical anthropology from University of North Carolina.

"This is quite a new problem. Universities hadn't done any work to speak of in the field, and at that point the Air Force hadn't done much research in body-size requirements for supersonic escape. Obviously, direct physical measurement during simulated movements would be imprecise and too time-consuming."

To solve the problem, Chaffee turned to "andrometry," his own coined word which means measuring man by special photography. The method is similar to that used in aerial mapping.

He selected 24 GD/FW volunteers who fall within the minimum and maximum size ranges required for Hustler flying duty.

Each of the men was placed in a simulated capsule, where he went through various maneuvers. Two 8x10 view cameras with long focus lenses, placed at 90 degree angles to each other, clicked away during these movements. Another overhead camera was also used on occasion.

"Our method produced negatives which included the test subject, certain fixed reference points, and a stationary seat reference point (SRP) from which all measurements were made," Chaffee said.

"The position of each visible anatomical point on the body appearing on the negatives was then measured on the negatives with respect to its distance from the SRP."

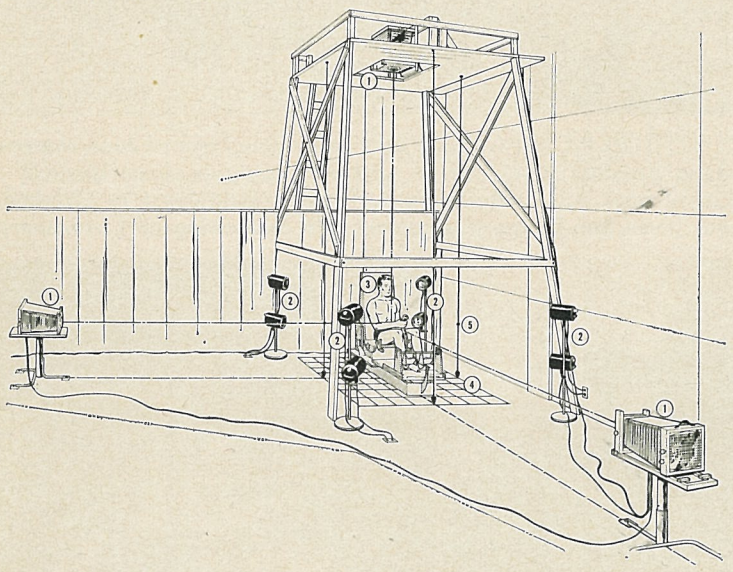
These datae were then used to establish minimum internal dimensions of the capsule, as well as the most desirable location for arm rests, head rests, and necessary restraint devices.

Final dimensions called for a capsule that would conveniently accommodate the middle 90 per cent of men physically qualified to fly in Hustlers.

"Andrometry has some decided advantages," Chaffee said. "Since negatives form a permanent record, a later analysis of them may be made to obtain various type data other than that originally required. It also makes it easier to check in cases of apparent errors in tabulation—a common thing in survey-type work."



RESULTS—John W. Chaffee, GD/FW physical anthropologist, inspects negatives on which men's movements were measured precisely. Photographer Aaron Murray, who helped arrange complex photograph coverage, took picture.



"ANDROMETRY"—Method for photographing movements of volunteers in simulated B-58 escape capsule is shown in artist's drawing. (1) Cameras; (2) Strobe lights; (3) simulator; (4) reference grid; (5) fixed reference points.

Missile and Aircraft Leaders Briefed On Terrier, Tartar, Redeye at Pomona

Nearly 70 leaders of Southern California's missile and aircraft industry visited General Dynamics/Pomona Nov. 15 for briefings on the Tartar, Advanced Terrier and Redeye missile programs.

Included in the group were administrators and engineers from North American, Marquardt, General Electric, Northrop, Hughes, Aerojet-General, Lockheed, Douglas, Radioplane, Aeronautics, Litten, Meletron, Jet Propulsion, Rocketdyne, Borg-Warner, General Motors, Autonetics, Astropower, Forsnas, Aerospace, Avien, Space Recovery, Ballistics Systems, New York Air Brake, Menasco, American Astrophysics, American Metal and Western Aircraft.

All are members of the Institute of Aerospace Sciences.

A confidential-level briefing on the three guided missiles was authorized by the Bureau of Naval Weapons and Office of Chief of Ordnance.

First Woman Flies Mach 2 in F-106

Carol Johnson of the Newhouse Broadcasting Corp. may be the first woman to make a Mach 2 flight in a Convair F-106.

Women's editor of radio station WSYQ, Syracuse, N. Y., she made the supersonic flight while covering the William Tell weapons meet at Tyndall AFB, Fla. So far as it is known, no other woman has made a Mach 2 flight.

GD/E's Versatile 4020 Recorder Performs Varied Astro Tasks

A device which automatically plots detailed graphs, writes out pages of technical data, and prepares drawings, is now in use at General Dynamics/Astronautics by telemetry data processing (Dept. 591-5).

The 4020 High Speed Microfilm Recorder built by GD/Electronics' Information Technology group provides rapid means of displaying, reproducing and storing information processed by GD/Astro's IBM 7090 computer.

Heart of the 4020 is GD/Electronics' Charactron shaped-beam tube which enables it to "write" up to 15,000 letters, numbers or characters per second. In a like interval, the high intensity, high resolution tube can draw 2,500 straight lines between pairs of given points, or generate up to 1,000 horizontal or vertical axes.

Computer information is translated into characters which the 4020 records with two 35 mm cameras.

One camera produces high quality film strips suitable for long-term storage. (One small roll of microfilm contains information which would fill a four-drawer filing cabinet with paper documents.)

The other turns out pictures on the spot. These are developed by the 4020 and displayed on a large screen within eight seconds after exposure.

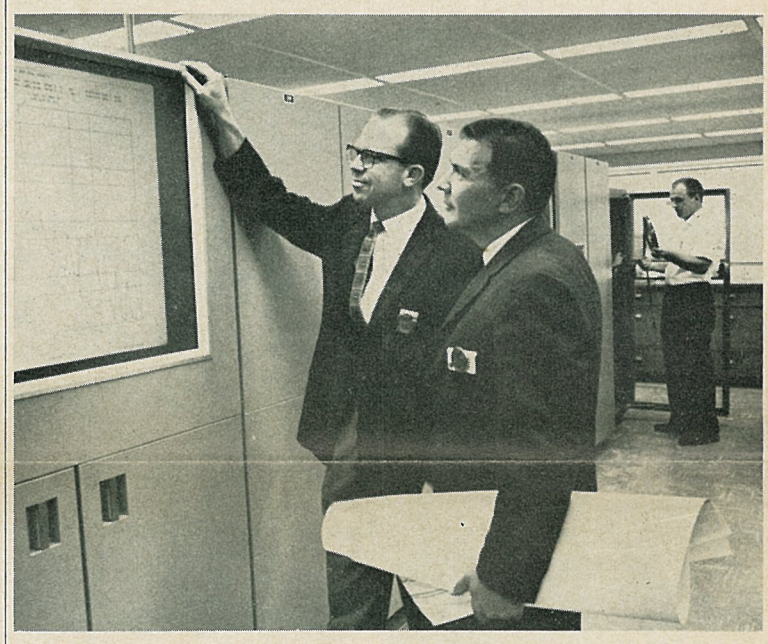
Presently the 4020-7090 combination is used on such projects as preparation of flight test reports, laboratory test data, trajectory studies, etc. These tasks utilize the 4020's skill at precision plotting of graphic information.

"By former manual methods, draftsmen used information from the computer to plot several points on a curve," explained H. E. Pietsch, research group engineer. "In a fraction of the time required for the manual task, the 4020 presents a more accurate picture by utilizing several times as many points in drawing a plot."

In handling printed material, the 4020 can produce a typical magazine page in less than a second.

"After several months of use, we are still finding new uses for this versatile equipment," Pietsch added.

Working with Pietsch to explore the 4020's capabilities are C. C. Dragila, research group engineer, and K. Leon Montgomery, research engineer.



PLOTTER—H. E. Pietsch and C. C. Dragila of GD/Astro examine large-screen projection of annotated graph drawn by GD/Electronics' 4020 High Speed Microfilm Recorder, while W. D. Thompson, rear, prepares another computer tape for insertion. Dragila holds blueprint-size "Copyflo" print made from 4020 presentation.

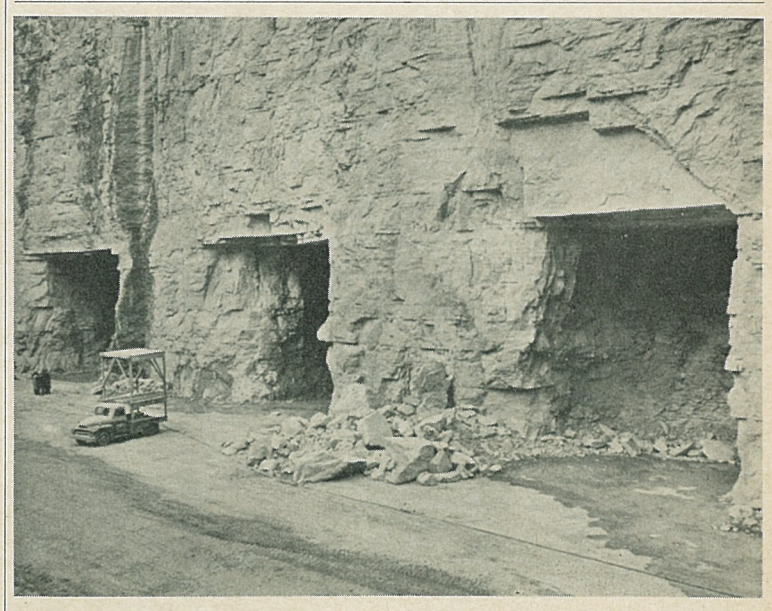
San Diego City College Educators Tour GD/Convair Production, Flight Facilities

H. W. Rubottom, GD/Convair chief of educational services, conducted three San Diego City College administrators on a tour of General Dynamics/Convair production and flight facilities late last month.

Walter L. Thatcher, City College director, Joseph H. Stephenson, dean of trade and technical education, and Walter G. Coats, coordinator of technical education, saw the 880-M and 990 assembly line, and inspected completed aircraft on the flight line.

Since City College technical program contributes to GD/Convair training, the visit was arranged to demonstrate effectiveness of cooperative training, said Rubottom.

According to Thatcher, the tour pointed up the close relationship existing between local industry and City College as the school strives to meet varied educational and training needs of the community.



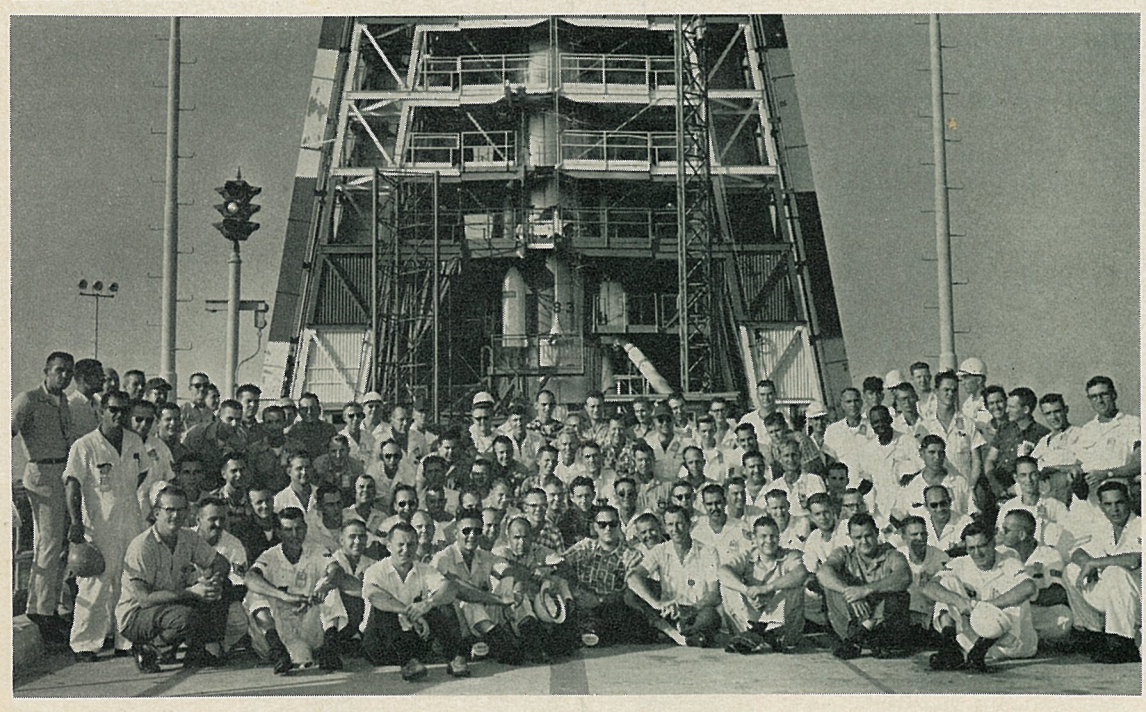
SHELTERS—Chicago Civil Defense authorities have eyed old (over 100 years) stone quarry owned by Material Service Division of General Dynamics as possible bomb shelter. Located only 15 minutes from Loop, it is 350 feet deep with massive caves running laterally.

GENERAL DYNAMICS

NEWS

ASTRONAUTICS EDITION

Vol. 14, No. 25 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, December 6, 1961



CRACK SHOTS—Astro Complex 11 crew at Cape Canaveral which launched recent second successful Atlas F-series ICBM is shown before gantry. Les Cole, test conductor, is front row center with dark glasses and patterned sport short. To left of Cole is AF Maj. Richard Minor, missile assistant test conductor.

Sell-Out Crowd Hears Von Braun On Space Future

"You at General Dynamics/Astronautics don't have to worry about making your contributions to our nation's space programs. Your efforts in the past have been commendable and your abilities are needed for the future."

Dr. Wernher von Braun, director of National Aeronautics and Space Administration's George C. Marshall Space Flight Center, made this observation last week in addressing the Astronautics Management Club.

The meeting was held in the International Room, El Cortez Hotel.

The club responded to von Braun's appearance with a record turnout (1,443). Tickets were sold out five days before the meeting. Von Braun, in turn, expressed admiration for Astro's work in rocketry.

Responding to an introduction by President J. R. Dempsey, von Braun quipped:

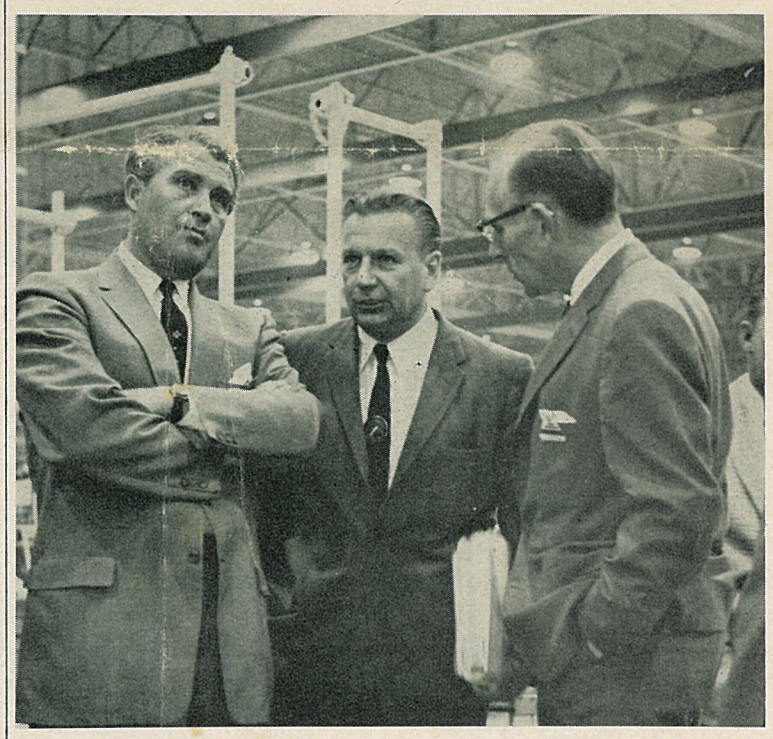
"I understood I was to address your Management Club, but it looks more like your whole corporation here tonight."

Von Braun revealed that on Jan. 1 technical management of Astronautics' Centaur program would shift to NASA's Marshall Center which he heads.

He brought out in general terms some of the beliefs prevailing at the Marshall Center concerning such programs, touching on adaptable scheduling making allowances for the unexpected, general philosophies and, above all, that launch vehicles can be perfected better at the factory than at the launch pads.

"No launch vehicle should ever be released for shipment at the factory that is not perfect in every respect," von Braun said. "When modifications are required at the pads, then the vehicle should again go through the same complete composite check-

(Continued on Page 2)



SPACE PARLEY — Dr. Wernher von Braun, left, director of NASA's George C. Marshall Space Flight Center, visited GD/Astro last week. He is shown here in factory with Krafft Ehricke, center, Astro's Centaur program director, and Dr. Hans Hueter, director of light and medium vehicles office at Marshall Center.

Atlas Places 'Enos' in Orbit In Spacecraft

Atlas 93-D, a Mercury spacecraft, and a chimp named "Enos" teamed up for a successful orbit and recovery operation last week as a prelude to this nation's first manned orbital flight.

Atlas 93-D performed perfectly in placing the Mercury spacecraft into orbit following a Nov. 29 launch from the General Dynamics/Astronautics-operated Complex 14 in Florida. Thomas J. O'Malley, test conductor, headed the Astro crew on the launch performed in conjunction with the National Aeronautics and Space Administration, the Air Force and associate contractor personnel.

Fired at 10:07 a.m. (EST), Mercury-Atlas 5 led to two earth-circling passes and a recovery operation at 2:53 p.m. (EST) 259 miles southeast of Bermuda. Enos was recovered alive and in good health.

NASA officials then revealed that Astronaut John H. Glenn Jr., (Lt. Col. USMC) has been selected for the first orbital manned flight when scientists are convinced the Mercury-Atlas vehicle is ready.

Meanwhile, GD/Astro last week shipped another "D" series Atlas to Cape Canaveral for use in the Mercury program. Loaded aboard a C-133B cargo plane at Miramar NAS, it arrived early Nov. 30.

Two Atlases Launched From Opposite Coasts

General Dynamics/Astronautics and Air Force crews on opposite coasts launched two successful Atlas ICBM flights within hours of each other Nov. 22.

From Point Arguello near Vandenberg AFB, Atlas 108-D with an Agena-B second stage was launched over the Pacific Missile Range, while from Cape Canaveral Atlas 4-F began a 5,000-mile flight over the Atlantic.

The Florida launch originated from GD/Astro's Complex 11 with Test Conductor Les Cole in charge. The missile—second successful F-series Atlas flight—carried two scientific pods in tandem position on its side.

The Atlas climbed to an altitude of 775 miles and attained a top speed of 14,500 mph. Some 520 miles down range, it released its nose cone which hurtled onward to pinpoint a target in the Ascension Island area.

The test flight evaluated the weapon system's performance over the predetermined range, and demonstrated capability of missile support systems.

It also served to test the nose cone designed for Minuteman ICBM—"second generation" U.S. operational missile.

Air Force Major Richard Minor was missile assistant test conductor for the Cape Canaveral launch, while GD/Astro's J. B. Kercheval was complex assistant test conductor. Jack Barnhart is Complex 11 foreman.

Dollar Pledges at Main Plant Climb to 95 Per Cent of Goal

More than $480,000 had been pledged in General Dynamics/Astronautics' Employees' Con-Trib-Club drive at San Diego by late last week, over 95 per cent of the $504,000 goal.

Participation tops 77 per cent.

Both figures are expected to climb still higher when all tab cards have been returned, J. R. Mitchell, chief of employee services, reported.

Meanwhile, drives at individual off-site bases, where separate dollar goals were set to support agencies in immediate areas, reached a climax, but no total figures were available on progress.

By Nov. 27, advanced product planning (Dept. 105) at San Diego reported 100 per cent participation and 120 and 169 per cent respectively in dollar pledges for hourly and salaried categories.

Product support aministration and support project offices administration (Depts. 300 and 301) attained 100 per cent participation and 122 per cent of dollar goals.

Hourly industrial relations (Dept. 130) employees reported 100 per cent participation and 93 per cent of dollar goals, while salaried employees attained 95 per cent and 146 per cent.

In other departments many salaried groups topped dollar goals. Included were: data processing and management systems (Dept. 101, 150) with 104 per cent; reliability control (Dept. 140) with 100 per cent; controller (Depts. 190-196) with 121 per cent; plant engineering (Dept. 250) with 108 per cent; support center (Dept. 340), with 130 per cent; tooling (Dept. 400) with 115 per cent; factory office and engineering test support (Depts. 700, 756) with 141 per cent; major assembly and missile checkout and acceptance (Depts. 758, 773) with 135 per cent; and electronics manufacturing (Dept. 780) with 103 per cent.

Special praise was voiced by Mitchell for the efforts of hundreds of volunteers who took part in the drive.

Plant Appearance Contest Inaugurated

A plant appearance program to improve "housekeeping" in General Dynamics/Astronautics work areas will begin in the near future, with monthly inspections of all department spaces.

The program, initiated at the request of top management, is designed as an inter-department competition, with each of four categories of work areas—office, factory, warehouse and crib storage, and laboratory — competing for monthly awards.

Inspection standards for each category have been established.

"The nature of our business demands close attention to cleanliness in production operations," explained J. W. Garrison, GD/Astro chief safety engineer (Dept. 130-8), whose office set up ground rules.

"High housekeeping standards have a direct application to efficiency of operation," Garrison observed. "While plant engineering (Dept. 250) is responsible for maintenance and repair, individual employees also have a responsibility in keeping their areas clean."

All department areas at Astronautics will be inspected once each month by an inspector accompanied by a department supervisor or alternate. Awards in each area category will be based on inspection reports.

Plaques for monthly winners are now being designed, and will be attached to department signs for prominent display.

Xmas Plans to Help Others Develop in Many Astro Depts.

Plans for "helping others" are occupying many at General Dynamics/Astronautics this week as Christmas approaches.

Efforts are in three categories. One is the annual "coins in the pool" project. Another is the Children's Christmas party. Still another is the practice of "adopting" needy families.

The coins project involves the reflection pool in Astro's reception center, Bldg. 2. Coins which employees and visitors have tossed in during the year will be recovered shortly before Christmas and turned into food, clothing and gifts for needy.

The children's party will take place Dec. 16 in the main plant cafeteria.

Already more than 15 departments and sections at Astro main plant have indicated they will "adopt" families this year and supply them with food and gifts.

Employee services is helping locate deserving families. Information is available through ext. 2657.

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Gift Wrapping Set For Monday Evening

Monday (Dec. 11) the first group effort involved in staging the Dec. 16 General Dynamics/Astronautics Christmas party for needy children takes place at the main plant cafeteria from 7:30 until 9:30 p.m.

At that time, help is needed to wrap, tag and sort some 800 gifts ranging from shoes and clothing to toys and also in decorating a giant Christmas tree.

This is the fourth annual affair in which groups and individuals combine their efforts to conduct a gala party for 150 of

(Continued on Page 2)

Prizes Offered For ARA Emblem Design and Name For 'Boosters'

Astronautics Recreation Association (ARA) is offering three prizes in each of two contests to Astro folk who come up with the best solutions to two current problems.

One contest involves a new design, the other a new name. Both open tomorrow (Dec. 7) and close Jan. 8. Eligible to take part are employees and members of their immediate families both at the main plant and off-site.

When Astronautics became a separate operating division of General Dynamics Corporation the old "Astro CRA" designation for its recreation program was scrapped. The new designation is ARA. This made obsolete the old "CRA" design utilized for patches, letterheads, brochures, club emblems, etc. A new design is needed that features the letters ARA, but is suitable for use also with the modernistic "GD" symbol for General Dynamics.

Astro's ARA would like some suggestions for designs from which to choose and adopt a permanent emblem.

Each entry must be drawn on an 8½ x 11½-inch sheet of paper or cardboard, either in ink, pencil, crayons or paints.

The second contest is to select an appropriate name for a volunteer group at San Diego that serves as a means of spreading the word about special events, programs and recreational activities. They work in various areas and are supplied special material from time to time. The obvious name, "booster," is not acceptable in that a similar group serving the Management Club now exists.

Again, each entry must be on a separate sheet of paper.

All entries must include the name of the contestant, his department and clock number, home address and plant telephone extension. If the entry is submitted by a dependent, the name of the Astro employee is required.

Entries are to be mailed to Astronautics Recreation Association, mail zone 130-50, at the main plant.

Prizes in each of the contests will be merchandise awards in denominations of $50, $25 and $10 for first, second and third places respectively.

Judges will include members of ARA's Employees' Council and its Women's Activities Council. In the design competition, a member of Astro's art section of communication department will also act as a judge.



TOUGH CHOICE—Jeanne Casey ponders variety of ARA monograms sketched by D. A. George. Suggestions for new design have been invited from all GD/Astro employees in contest opening Dec. 7. Winners will receive prizes.

Log Book Entries

Promotions

MAIN PLANT

Promotions to or within supervision effective Nov. 20.

Dept. 101-0, Data Processing: To clerical asst. supervisor, C. E. Wolfe.

Dept. 123-0, Graphic Reproduction: To planning asst. supervisor, R. G. Lykins.

Dept. 175-0, PACE Services: To PACE program supervisor, E. M. Eppstein, J. R. McIntire.

Dept. 193-3, Industrial Accounting: To timekeeping general supervisor, W. H. Simms. To timekeeping supervisor, J. R. Paulson.

Dept. 220, Manufacturing Control: To manufacturing control foreman, J. L. Holzbog. To manufacturing control asst. foreman, G. A. Hillis, John Santos, F. E. Smith.

Dept. 300-0, Product Support Office: To product support administrator-electronic projects, C. C. Campbell Jr.

Dept. 322-9, Support Publications: To support publications supervisor, F. R. Baker.

Dept. 324, Field and Service Engineering: To field engineering general supervisor, D. P. Bender. To service engineering supervisor, G. R. Goddard. To field engineering supervisor, R. J. Mazurkiewicz.

Dept. 330-0, Support Logistics: To chief of support logistics, G. R. Sibley.

Dept. 331-0, Support Supply: To GFE general supervisor, F. M. Mears.

Dept. 333-2, Off-Site Logistics: To support logistics asst. supervisor, J. L. Housand.

Dept. 342-2, Support Quality Control: To inspection asst. supervisor, G. R. Gray.

Dept. 344-3, Support Operations: To asst. foreman, F. J. Ford.

Dept. 351-1, Field Modification: To support calibration group engineer, H. L. Davis, J. C. Tate. To foreman, R. A. Brown.

Dept. 400-0, Tool Engineering: To off-site tool projects coordinator, I. G. Rooder.

Dept. 530-0, Design: To project engineer, F. D. Applegate.

Dept. 603-0, Base Activation: To activation scheduling asst. supervisor, F. B. Spieker, M. J. Tellep.

Dept. 756-0, Engineering Test Support: To asst. foreman, J. S. Adams, L. C. Ferguson. To foreman, W. H. Houchin, D. E. Tibbs.

Dept. 759, Sub-Assembly & Mockup: To general foreman, H. H. Miller.

Dept. 780-0, Electronics Manufacturing: To superintendent, A. E. Hill.

Dept. 831-1, Material Control: To material control supervisor, R. F. Stephens.

Dept. 843-1, Material Price Analysis: To material cost supervisor, R. J. Rose.

ALTUS AFB

Dept. 617, GD/Astronautics Operations: To launch complex supervisor, G. R. Thomas. To asst. foreman, E. O. Babb.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To launch complex asst. supervisor, D. M. O'Donnell Jr. To asst. foreman, L. E. Rees.

EDWARDS RS

Dept. 576, GD/Astronautics Operations: To facility records and control asst. supervisor, W. D. Hunter.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To asst. foreman, R. M. Bratzler, W. J. Moore, M. E. Pershing, C. D. Shulte, P. Neumann. To inspection asst. supervisor, W. F. Harper, W. E. Simmons, M. L. Stouse. To activation engineering asst. supervisor-base, H. W. Riner. To launch complex asst. supervisor, R. N. Willett, J. L. Osborne.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To production control asst. foreman-base, H. L. Gaines. To asst. foreman, H. J. Wissig.

SCHILLING AFB

Dept. 615, GD/Astronautics Operations: To asst. foreman, K. P. Earl.

SYCAMORE

Dept. 573, GD/Astronautics Operations: To inspection asst. supervisor, R. D. Brant. To asst. foreman, M. Richardson.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To launch complex supervisor, C. L. King. To production control asst. foreman-base, A. L. Collins.

WARREN AFB

Dept. 611, GD/Astronautics Operations: To production control foreman-base, L. J. Sortor. To asst. launch complex supervisor, R. E. Henry.

Births

SCHILLING AFB

TOUCHBERRY—Son, William Dwight, 7 lbs., 11 oz., born Nov. 22 to Mr. and Mrs. W. H. Touchberry, Dept. 615-0.

Service Emblems

MAIN PLANT

Service emblems due during the period Dec. 1 through Dec. 15.

Twenty-year: Dept. 130-1, M. J. Chilcote; Dept. 756-7, Stanislav Pauchnick; Dept. 759-0, P. P. Standley.

Fifteen-year: Dept. 404-0, Alex Rohr; Dept. 604-0, J. H. Mann; Dept. 759-0, S. P. Contasti, R. J. Koeller; Dept. 811-1, L. C. March; Dept. 833-3, M. J. Dalessi.

Ten-year: Dept. 154-1, G. W. Lyons II; Dept. 155-0, J. H. Nash; Dept. 170-1, E. E. Higgins; Dept. 182-0, L. W. Kegans; Dept. 191-0, Margaret K. Kehle; Dept. 322-7, S. C. Hardy; Dept. 351-3, J. D. Beamer; Dept. 454-0, H. E. Shidner; Dept. 480-0, C. E. Meredith; Dept. 521-6, J. H. Viskil; Dept. 525-5, C. J. Gibson; Dept. 564-1, G. W. Conrey; Dept. 604-0, Harold Lee.

AFMTC

Ten-year: Dept. 571-5, D. M. Maximovich.

ALTUS AFB

Ten-year: Dept. 617-7, R. W. Smith.

FORBES AFB

Twenty-year: Dept. 614-0, G. W. Cooper.

LINCOLN AFB

Twenty-year: Dept. 616-0, L. H. Green.

PLATTSBURGH AFB

Twenty-year: Dept. 620-3, D. M. Carlton.

SCHILLING AFB

Ten-year: Dept. 615, D. A. Falls, W. E. Wheeler.

SYCAMORE

Fifteen-year: Dept. 573-3, D. P. Clopton.

VANDENBERG AFB

Ten-year: Dept. 576, Floyd Fincher, D. F. Ganoe, Burnice Slot.

Deaths

MAIN PLANT

BUCKLAND—William Bert, Dept. 553-3. Died Nov. 22. Survived by wife, Lorna, and daughters Rhonda, Theresa and Collene.

WHITE—Elizabeth P., Dept. 331-1. Died Nov. 16. Survived by daughter, 12, and mother, Mrs. Esther Peterson.

AFMTC

DU CHARME—Albert J., Dept. 571-5. Died Nov. 18. Survived by wife, Jeanne.

EDWARDS RS

SMITH—Jack P., Dept. 575-3. Died Nov. 23. Survived by wife, Mary.

Gift Wrapping Session Set

(Continued from Page 1)

San Diego County's needy youngsters.

Con-Trib-Club sets aside $2,500 for financing and Salvation Army selects the kids and helps with the party. Groups within ARA stage the affair with a yeoman's share of the work (like fitting each child with shoes and clothing) falling to the Wives Auxiliary. Prophet Co. and its food suppliers provide and prepare luncheon. Davidson Brothers adds sweets for each and prizes for games and contests.

Astro's transportation employees give their time to drive vehicles to bring the children to the plant and return them home. This year additional drivers and vehicles may be required.

Work on the day of the party begins before 10 a.m. and consists of rounding up the guests, seeing they are seated at the right place, entertaining them, conducting games, then feeding and showering each with gifts.

While volunteers are being signed up daily, others can always be used. Call Dixie, ext. 600, for details.

Turnout Big For Von Braun

(Continued from Page 1)

out routine employed at the factory."

In his slide-illustrated talk, von Braun traced the history of space ventures by the United States, including those in which Astronautics-produced launch vehicles have participated. He predicted that Astro's Centaur, scheduled for launch in the near future, would play a "very, very important" role in space explorations. He added that Centaur may be a part of Saturn, this nation's largest space vehicle to date. It was successfully launched recently.

He visioned that with luck the United States will place a man on the moon and bring him back by 1970.

Details of Saturn as a launch vehicle for the three-man Apollo spacecraft in various configurations occupied much of von Braun's talk.

He pointed out that now on the drawing boards is a Saturn (the C-5 model) configuration with a proposed 7.5 million pounds of thrust which could put 220,000 pounds of payload in orbit. Several orbiting units of this type, by rendezvous and docking in space, could pave the way for a flight to the moon.

Von Braun's appearance at the meeting coincided with a visit to San Diego for conference with top Astronautics officials.

Special guests at the closed meeting included members of von Braun's Marshall Center staff, key General Dynamics Corporation officials, and top Astro management.

M. V. Wisdom, director of industrial relations, was master of ceremonies for the sponsoring department.

Robbins Appointed To Operations Post

Appointment of F. D. Robbins as manager, operations control, was announced last week by E. D. Bryant, General Dynamics/Astronautics vice president - operations.



F. D. Robbins

Robbins joined the company in October after serving as deputy Air Force Plant Representative at GD/Astro since 1959. He was employed at GD/Convair from 1940 to 1950, except for a two-year period of Navy service.

He subsequently served in Air Force civilian assignments at both GD/Convair and GD/Astro.

Blood Volunteers Give 297 Pints

Volunteer blood donors from operations departments at GD/Astro provided 297 pints of blood Nov. 30 to help ease a critical shortage in reserves.

Until that time, Astro's credit with the San Diego Blood Bank had sunk well below regular minimums. Present supply is expected to be adequate until the next quarterly bloodmobile visit.

Sycamore Canyon Test Crews Pass New Safety Milestone

General Dynamics/Astronautics' most distinguished safety record—posted by Sycamore Canyon Test Site—passed another milestone late last month.

On Nov. 18 Sycamore Canyon completed its 1,000th day without a lost time or disabling injury! And at last report the record was continuing.

Last disabling injury at Sycamore Canyon came on Feb. 19, 1959. Since that time employees working at the site have logged 3,546,739 manhours.

The manhours total is slightly more than one month's work for the entire main plant work force, but it would constitute a lifetime's labor for a 40-man crew.

J. W. Garrison, Astro's chief safety engineer, was high in his praise of safe working conditions at Sycamore Canyon and praised individual performance of each employee.

P. T. Gardner, Sycamore manager, added his commendations to all. He said:

"Considering the work exposures we must experience in accomplishing any test program, this achievement becomes even more significant."

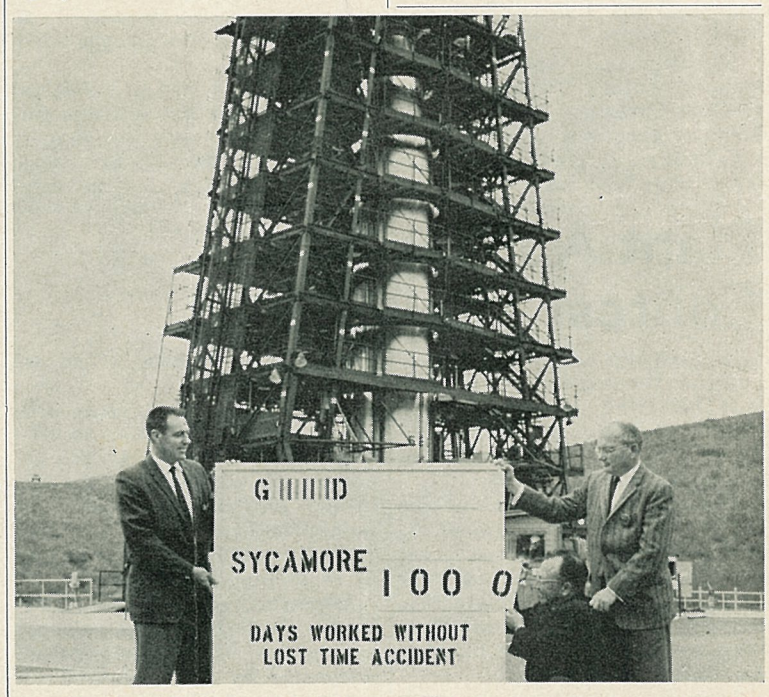
Plant 2 Telephone Number Changed

A new external telephone number and new switchboard hours become effective Tuesday (Dec. 12) at Plant 2.

The new number is CY-7-7111. Switchboard hours will be 7 a.m. to 12:30 a.m. Monday through Friday and 7 a.m. to 3:30 p.m. on Saturday.

Switchboards are closed Sundays and holidays.

The following emergency numbers may be used at these times: hospital, CY-7-3684; industrial security dispatch, CY-7-3692; GD/Convair plant engineering maintenance dispatch, CY-7-1374; GD/Astro plant engineering maintenance dispatch, CY-7-2023.



ASTRO'S FINEST—With Sycamore Canyon Test Site stand in background, safety signs are changed to mark unusual accomplishment—1,000 days worked without lost time accident. J. W. Jarvis, safety engineer, makes change while P. T. Gardner, right, base manager, and F. J. Stewart, chairman of Sycamore's Workmen's Safety Committee, help.

General Dynamics NEWS

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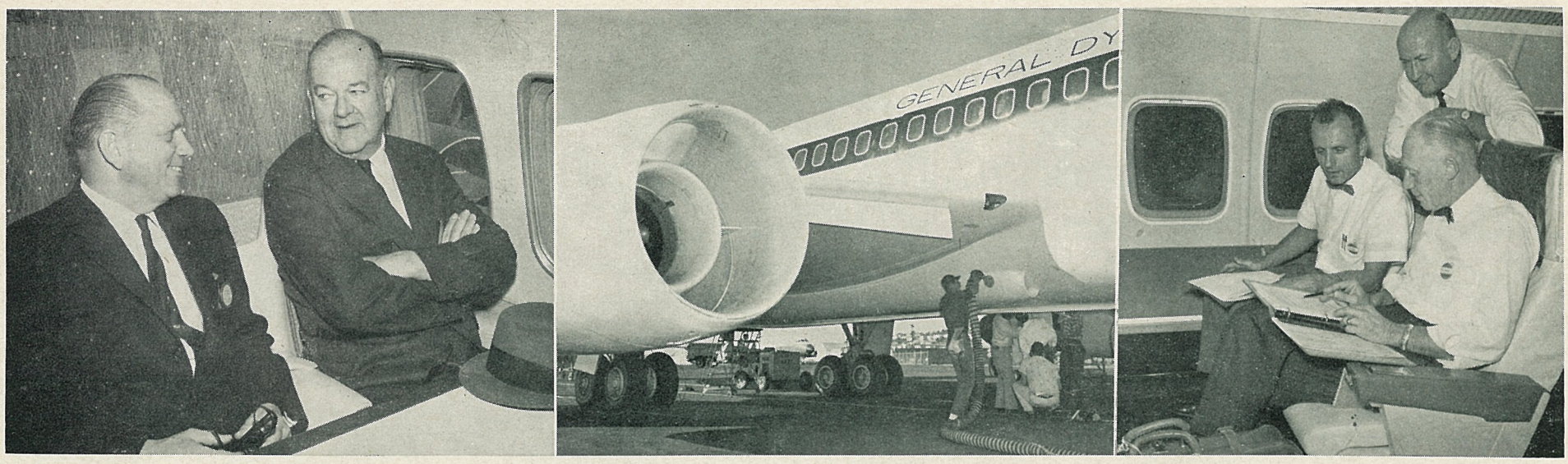
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990 HIGHLIGHTS—At far left, C. R. Smith (right), American Airlines president, and J. H. Famme, GD/Convair vice president and general manager, try out lounge in American Airlines Convair 990 jet airliner at San Diego. Center is 990 caught refueling at GD/Convair on brief stop during functional and reliability test program which took it cross-country round the clock; at far right, FAA inspectors aboard are Mike Brego, F. R. Beemon, R. J. Bowers. Other FAA men on F&R flights included Rudy Kapustin, Jim Butler. F&R program may be concluded this week; FAA certification of 990 is slated by end of year.

New Electroforming Machine Offered by General Atomic

Commercial availability of the first electromagnetic metal-forming machine for industrial use was announced last week by the General Atomic Division in San Diego.

"Magneform," the new metal-working tool, employs lightning-fast bursts of electromagnetic force to assemble, attach and shape metals quickly.

Magneform applies a powerful magnetic field against a work piece of metal in pulses of 10 to 20 millionths of a second, creating pressures ranging up to more than 50,000 pounds per sq. in.

These giant pressures can be used to collapse, shrink or compress tubing, to attach terminal connections onto rope, steel, or coaxial cables, or to swage firmly together sections of telescoping tubing.

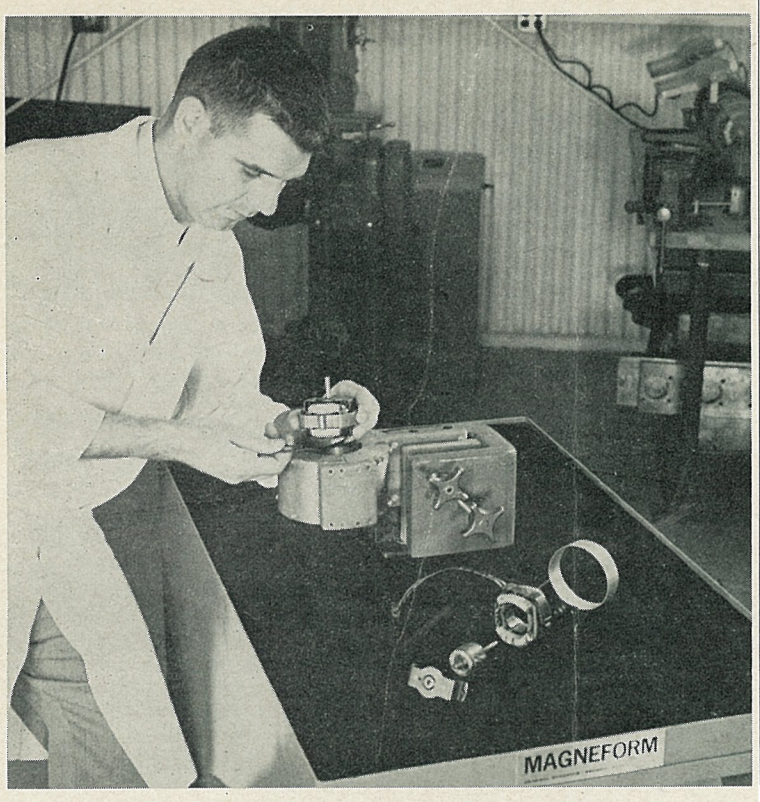
In other applications, the magnetic pressure will expand tubing to form a tight-fitting bearing, hub or bushing. Since it is never necessary to bring the work piece into physical contact with the coil producing the magnetic field, Magneform eliminates scratching, marring and other surface damage.

Easily interchangeable coils make Magneform highly versatile. Quick substitutions of coils by the operator permits a variety of successive operations—including swaging, expanding, forming or shearing metals, dimpling, blanking, embossing or coining.

The compact Magneform is housed in a small console, about 4 feet by 2 feet by 3 feet high, and uses a conventional 220-volt, 60-cycle power source. Cylindrical coils up to six inches long and up to six inches in diameter and flat coils with diameters up to one foot have been used so far in industrial applications. Larger coils can be made.

The machines are available to industrial users under lease at approximately $6,000 a year, including maintenance service.

Magneform grew out of experience gained by General Atomic in its controlled fusion research.



MAGNETIC ASSEMBLER—A new machine which can assemble, attach and shape metals using "gravity" is now in production and available on lease from General Atomic, division of General Dynamics. Called Magneform, machine is first to use magnetic field for energy in part formation and assembly.

Delta Expands 880 Jet Service SF to Jamaica and Caracas

Delta Air Lines expanded its Convair 880 jetliner service to South America this month.

Weekly round-trip 880 service was inaugurated Dec. 1 between San Francisco and Caracas, Venezuela, with intermediate stops at Dallas, New Orleans, and Montego Bay, Jamaica.

T. M. Miller, Delta vice president-traffic and sales, said the 88-passenger Convair 880, offering first class and tourist accommodations, departs San Francisco each Friday at 1:05 a.m. PST, Dallas at 7 a.m. CST, New Orleans at 9:30 a.m. CST, reaches Montego Bay at 12:50 p.m. EST. The flight departs at 1:20 p.m. and arrives in Caracas at 3:39 p.m. EST.

On the return trip the 880 jet leaves Caracas each Saturday at 1:20 p.m., departs Montego Bay at 3:25 p.m. EST, arrives in New Orleans at 5 p.m. CST. Its departure for San Francisco is 6:10 p.m. CST, arriving in Dallas at 7:17 p.m. CST and the bay city at 9:25 p.m. PST.

'Dynamic America' A Gift Suggestion

General Dynamics employees were reminded this week that copies of "Dynamic America" will make good Christmas presents.

A limited number of the elaborately illustrated volume continue to be available at employee services outlets at all divisions. Although the book store price is $20, a special rate of $7.50 per copy has been offered to employees.

"Dynamic America" profiles the history of General Dynamics in relation to the nation's industrial progress. More than half of the volume's 1,000 illustrations are in color.

Horne Pledges Strong Effort To Push Electronics Business

A concerted effort to expand General Dynamics/Electronics business in miltary subsystems and systems, and in industrial electronics is under way, President Charles F. Horne reported to his supervisory staff during a meeting at the Electronics Center in Rochester recently.

"We are seeking business," he said, "that requires competent engineering and high quality workmanship which our people can provide. The quality of our products has been demonstrated again and again, and now we must get the business that will continue to make use of our skillful people."



C. F. Horne

Since General Dynamics/Electronics is seeking military business, he said, the division must be organized to work with the government.

By entering the industrial electronics business, Horne said, the division will have more flexibility in the use of personnel.

Data processing, the use of high-energy acoustical power, school sound systems, intercom and public address systems are a few fields he mentioned meriting more attention.

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Executive appointments, many of them new only in titles and responsibilities, were made this week for General Dynamics/Electronics in Rochester by Charles F. Horne, president.

Reporting directly to Horne will be:

Sidney R. Curtis, a veteran of 37 years with GD/E and its predecessor, Stromberg-Carlson, as vice president for plans and programs.

Dr. Nisson A. Finkelstein, director of research at GD/E since 1959, as vice president for research and engineering.

Arthur J. Hatch Jr. in the same position he has held for the past two years, as vice president for commercial products.

Roy W. Jones, former director of manufacturing, and having 20 years of experience in production in the Telecommunication Division, as director of operations.

Robert D. Gray, with seven years experience in engineering and program direction, as director of quality control.

Arthur E. Linkins, in the same position as director of contracts to which he came in early 1960.

Frederick L. Gagnon, with 13 years' experience as an electronics engineer, project director and program manager, as program director.

Wayne K. Bright, former controller of the Military Products Division, as controller.

Kenneth R. Harkins, a member of GD/E legal staff for the past 18 months, as division counsel.

David S. Cook, with a record of 20 years in advertising, sales promotion and public relations with GD/E and Stromberg-Carlson, as assistant to general manager.

Robert J. Gilson, former general manager of Military Products Division, as special consultant to the president and general manager.

Breakthrough Achieved In Metal Joining For Future Space Vehicles

A breakthrough which may prove of paramount importance in construction of space vehicles of the future has been achieved by a group of General Dynamics researchers.

Sections of tungsten have been joined successfully at low temperatures in the materials laboratory at General Dynamics/Convair. The feasibility project, originated by GD/Astronautics applied manufacturing research and process development, (Dept. 290), stretched over a six-month period of experimentation to result in, what may be, the first successful attempt of its kind.

"Such low-temperature joining of a refractory metal (metal of high strength at high temperature) has, to our knowledge, never been done before," said L. B. Ziffrin, Astro senior manufacturing development engineer, who began and directed the project.

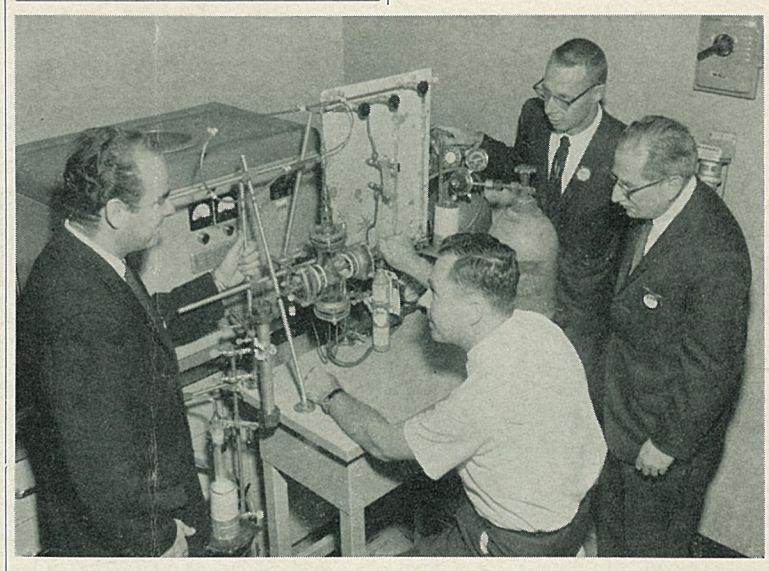
"All of the metals which will be used to build high-speed craft and missiles to withstand the extremely high temperatures generated by fantastically high speeds and stresses in outer space, have, by their very nature, extremely high melting points (i.e., melting point of tungsten is 6,170 degrees F.)," explained E. E. Keller of materials lab. "When sections of such metals are joined at fusion point, there is great risk of damage to the metal.

"A method of low-temperature joining, or low in comparison with the metal's melting point, had to be found to prevent recrystallization of the metal and to eliminate buildup of thermal stresses which cause the metal to break or wrinkle."

Keller, who was in charge of developing experimental apparatus and procedures, said that the method finally evolved after months of research, centers around use of concentrated induction heating to 1,100 degrees F.

Air is evacuated from the test chamber in which tungsten sections are clamped; a mixture of hydrogen and tungsten hexafluoride in gaseous form in directed through a nozzle to deposit the tungsten, reduced to metal by the concentrated heat, on to the joint.

Dr. V. A. Favati, Astro senior manufacturing development engineer, was coordinator; Dr. O. E. Myers of GD Scientific Research, consultant.



SUCCESSFUL—General Dynamics team responsible for scientific achievement in joining refractory metals gathers around test setup. From left, Dr. V. A. Favati, Astro Dept. 290; E. E. Keller, materials lab located at GD/Convair (seated); Dr. Orlo E. Myers, GD Scientific Research; Lou Ziffrin, Astro Dept. 290.

Early Missile Research Sparked By Need to Combat Suicide Raids

(Following is No. 73 in continuing history of General Dynamics products, completing account of development of delta wing that led to F-102, F-106 and B-58 aircraft.)

Next to delta-winged aircraft, Convair's most important military production by the mid-50s was missiles.

Derived from early research at Vultee Field, Convair's first venture into the field of guided missile stemmed from a Navy project to find an answer to Japanese "kamikaze" suicide plane tactics.

Studies made in 1944 pointed to an ideal anti-aircraft weapon which would be capable of homing on piloted aircraft. The Bureau of Ordnance early in 1945 enlisted the help of the Applied Physics Laboratory of Johns Hopkins University.

In an early application of what is now called the "weapon system concept," BuOrd assigned overall technical direction to APL (which had made its mark in development of the proximity fuse). APL selected associate contractors in many fields: pure research, electronics, explosives and the like. Convair was picked to carry principal airframe responsibility, and had a collateral role in the ramjet burner development.

Vultee Field worked on two types of airframe: a controlled test vehicle (CTV) of a subsonic speed for testing stabilization and controls tied to a Bendix beam follower, and a supersonic vehicle (STV) for exploring the aerodynamics of faster-than-sound flight. Both were powered by solid-fuel rocket motors.

CTV (called Gnat) progressed swiftly. Engineering began releasing orders to the shop the first week in June, 1945, and the initial unit was shipped to APL June 29.

Successful firing (meaning it remained airborne over its expected trajectory) followed on July 2. Gnat's velocity was 800 ft./sec. with an endurance of 13 seconds. By June, 1946, Gnat followed a radar beam (slow). Testing was discontinued before all of approximately 90 CTVs had been expended.

Development of STV (called Snoot) came along more slowly. Information was sent for calculating supersonic loads and drag.

Dr. A. G. Mitchell of APL participated in conferences at Downey in July, 1945, where C. R. Irvine, Vultee Field chief engineer, and his staff roughed out the configuration "on the back of an envelope."

Analysis of aerodynamic data was completed in August and the first missile was sent to APL in October. It was fired at Island Beach, N. J., with results typical of the art in 1945: "The missile tumbled immediately after launching and hit the ground 200 yards from the launching site . . . exact cause has not been determined."

After minor modification the second missile was fired with what might be termed 100 per cent improvement—it travelled some 400 yards before touching earth. Missile No. 3 was launched with moderate success in January, 1946, at the new Naval Ordnance Test Station near Inyokern, Calif., and by March a "fully successful" firing heartened engineers.

Slowly, painstaking development continued into the summer of 1948; through some STV-1s through the STV-2 series (first fired in August, 1947) and the early STV-3s (first fired April 8, 1948).

In a spectacular breakthrough, the contracting team solved the aerodynamic and control problems so well that BuOrd and APL decided to convert STV-3 into a tactical weapon without waiting for perfection of the ramjet motor. Thus, Terrier was born.

Flight Rating Tests Completed On Centaur's Rocket Engines

Completion of preliminary flight rating tests on this nation's first liquid hydrogen rocket engine, which will power the General Dynamics/Astronautics Centaur launch vehicle, has been announced by the National Aeronautics and Space Administration (NASA).

The engine, the RL-10 (formerly called XLR-115), was put through 20 captive firings in just five days. Conducting the test was the engine developer, Pratt and Whitney Division, United Aircraft Corp.

All firings were conducted under simulated space conditions with the engine consistently producing its rated 15,000 pounds of thrust.

Two RL-10s will be used in powering the Astronautics designed and produced Centaur space vehicle. NASA indicated Centaur is slated for its first flight test "in the next few months."

Development of this engine dates back to October, 1958. Since that time 700 firings were held for an accumulated time in excess of 60,000 seconds, NASA indicated. Recently, firings were accelerated to about 70 per month.

Twelve RL-10s have been delivered to the High Thrust Test Area, Edwards RS, to NASA's Lewis Research Center, to GD/Astronautics and to Douglas Aircraft for further testing prior to launching both Centaur and Saturn space vehicles from Cape Canaveral, Fla.

Fueled by liquid hydrogen, (boiling point is minus 423° F.) the engine is designed to provide a capability of multiple restarts in space with "coast" periods of many hours between firings.

MacBride and Loomis Leave Gen. Dynamics

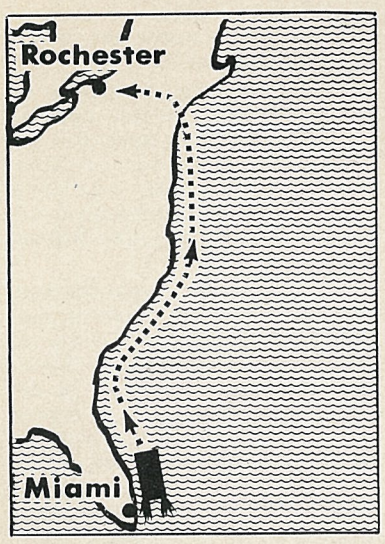
Resignations of two General Dynamics executives—C. Rhoades MacBride, executive vice president, Western Group, and Robert C. Loomis, president of GD/Convair — were disclosed last week.

Loomis has accepted a position as president and chief executive officer of American Electronics, Inc. of Fullerton, Calif. He had held executive posts at Pomona and San Diego for 14 years.

MacBride came to San Diego from New York early this year. He had been with General Dynamics since 1958.

Seneca as 'Deepest Lake' Challenged; Crater in Oregon Merits the Title

Following is a letter by a former General Dynamics/Convair and Astronautics employee who is both a close reader of General Dynamics NEWS and a student of geography.



ROUTE — Sketch shows route taken from Florida to Seneca Lake, near Rochester, N.Y. (via Hudson River) by barge which GD/Electronics will use in anti-submarine warfare research.

"Dear Editor,

"In reference to your story in the Nov. 8 issue, you identified Lake Seneca in the 'GD/Electronics Barge will do ASW Research,' story as 'by far the deepest of any U.S. lake other than the Great Lakes.'

"You are way off.

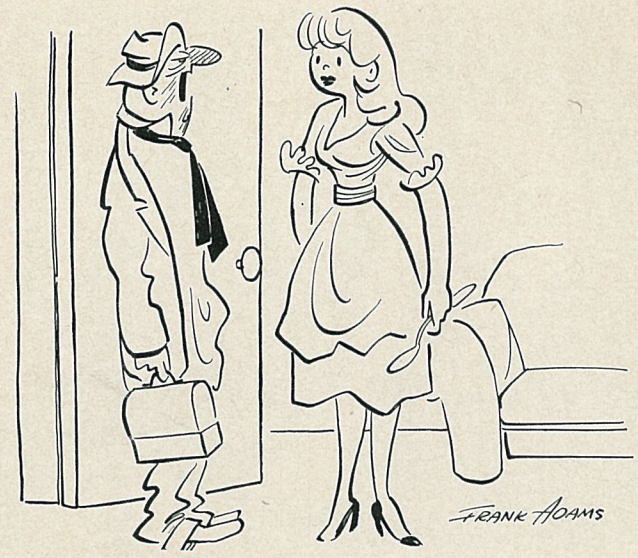
"I'm positive Lake Chelan, Washington is 2,100 ft. deep, Crater Lake, Oregon, 2,200 ft. deep and Lake Tahoe, California, about 1,200 ft. in depth.

"Check this and I'm sure you will find all these bodies of water are deeper than Lake Seneca.

Garland Mitchell
San Clemente, California

"P. S.: Seneca may be the only lake accessible to this barge."

Editor's Note: You are right. Not only Chelan (1,000-1,500 ft.), Crater (1,996 ft.) and Tahoe (1,650 ft.) qualify as deeper, but the Pend Oreille, Idaho, (1,158 ft.) would also join this group. Qualifying phrase "that has direct access to Atlantic Ocean" was omitted from original story.



"All of us in the back seat lost control of the car . . . the driver stopped at every bar on the way home . . . "

Contract For Unit of Mauler Awarded to Canadian Concern

A contract for $1.7 million for production development of an infrared acquisition unit for the Mauler missile system has been awarded to a Canadian firm, according to a recent announcement in Washington, D. C.

The United States and Canadian governments jointly announced award of the contract—the first cooperative development of a missile system between the two governments—to DeHaviland Aircraft Corporation of Canada, Ltd., Downsville, Ontario. The contract was awarded through the Canadian Department of Defense.

Mauler, the U. S. Army's newest air defense missile system under development, is designed to destroy enemy supersonic aircraft, short-range ballistic missiles and rockets in a battlefield area.

The U. S. government through the Detroit Ordnance District will share the cost of the development program with the Canadian government.

The Army Rocket and Guided Missile Agency, an element of the Army Ordnance Missile Command at Redstone Arsenal, Ala., has overall charge of Mauler development and will provide technical supervision.

Technical guidance will also be furnished to DeHaviland by General Dynamics/Pomona, prime contractor for the Mauler system.

All development work on the Mauler infrared acquisition unit will be performed in the DeHaviland plant in Toronto, Ontario.

Halsey Appointed Acting Night Mgr.

W. D. Halsey, assistant factory manager, has been assigned as acting night manager by President Frank W. Davis at GD/FW.

Halsey's appointment is a continuation of the management training program, in which various department heads are assigned, on rotation basis, to serve as temporary night manager.

Advanced Products Dept. Expanded at San Diego

Rapidly expanding Advanced Products Department of General Dynamics at San Diego now boasts 176,000 sq. ft. in total area after recent completion of a 7,800-sq.-ft. wing for the mechanical section.

Consolidation of Advanced Products' two sections, chemical and mechanical, was facilitated when the original two-story building opened last year.

R. G. Monsees, general manager, said "the versatile facility promotes the necessary division of activity within the department, essential for safer and more lucrative research."

Housing for mechanical (formerly known as Dynapak) section's engineering, sales and administration has been provided by the low-flung, rambling wing.

Installation of the "701" telephone switchboard has directly connected Advanced Products with GD/Convair. In operation less than a month, the "701" has a capacity of 2,000 outlets.

Concurrently, the second floor of the chemical section is being converted to laboratories.

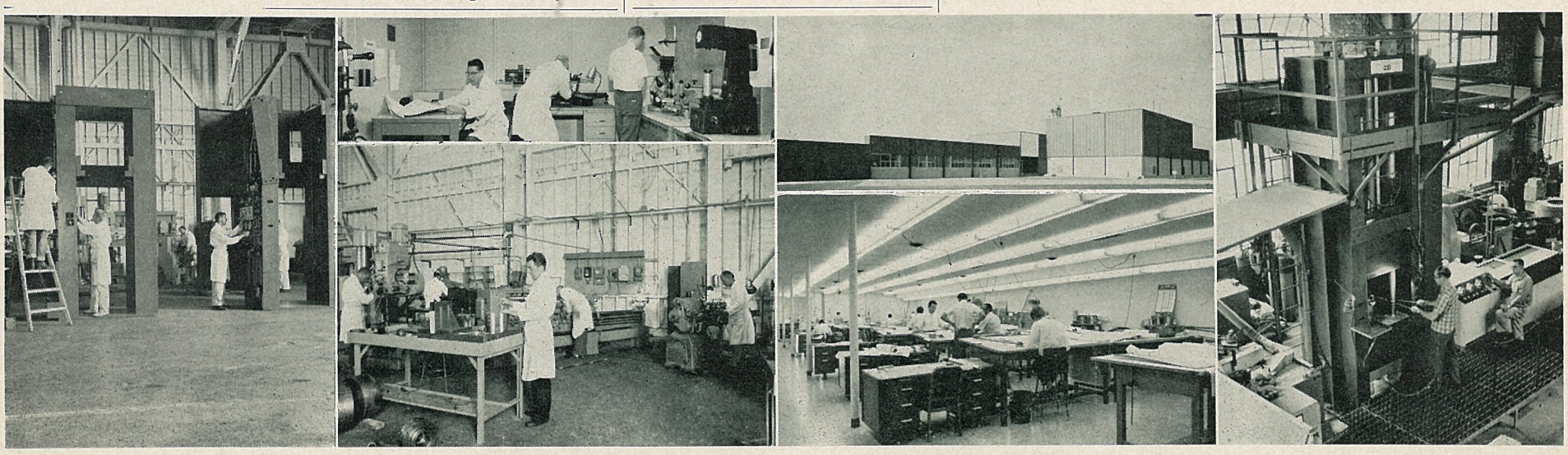
Separated from mechanical section by a firewall, chemical section's total floor area, including pilot plant, is 7,936 sq. ft.

Located on GD/Convair SD ramp, Advanced Products will receive a decisive experimental boost when a one-million pound capacity testing pad, under construction at GD/Astronautics, is completed.

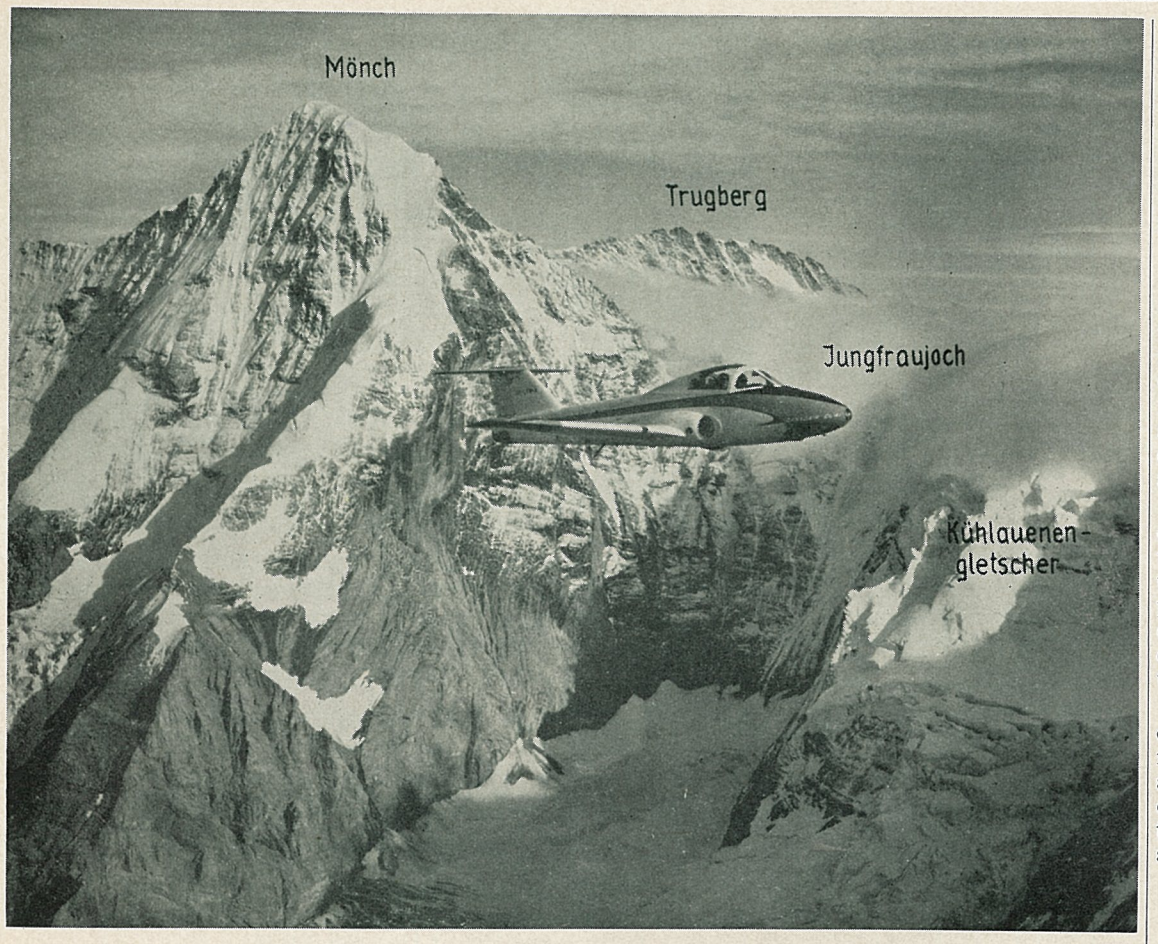
Included in Advanced Products' rehabilitation activity was the recent renovation of Bldg. 37, mechanical section's parts, tooling and assembling area.

Home of "Dynapak," high-energy rate forging machine, and the new "AP-Resin-XHU," a multi-purpose chemical solid, Advanced Products employs 150.

"As the only producer of a high-energy rate machine which can point to actual production capability and with the expected marketing potential of "AP-Resin-XHU," the potential here is unlimited," Monsees said.



EXPANSION—General Dynamics' Advanced Products Department at San Diego, which recently completed new wing, is shown above. Expanded facility is divided between mechanical and chemical sections. Largest vertical Dynapak machine in production (right) is pictured at American Brake Shoe Co. Engineering department in new wing (bottom right), Dynapak prototype lab (bottom left), metallurgical laboratory (top left) and Dynapak assembly (far left) are among facilities.



OVER THE ALPS—Canadair's trim CL-41, jet trainer, is shown cruising above Alps while on recent demonstration visit to Europe. Photo was shot from Swiss Air Force plane. Royal Canadian Air Force has ordered 190 of these ships as most modern trainer on market.

High Speed Teletype System Links All Dynamics Divisions

General Dynamics/Astronautics Division's private wire teletype communication network will merge next month with the General Dynamics Corporate system, resulting in a considerable overall financial saving as well as increased efficiency of service to all Dynamics divisions.

The Astro network was created originally for logistics support to Atlas missile off-site bases under construction in far-distant parts of the country. The same, or improved, logistics service will continue via the expanded system.

R. E. Bennis, corporate coordinator of wire communications, reported that as the two systems are identical Western Union Telegraph Co. type 111-B installations, virtually no difficulty is anticipated in the consolidation.

There will be three switching centers, located in New York, Fort Worth, and San Diego. Fanning out from these are direct lines to key points, such as Rochester, Montreal, Washington, Chicago, Atlanta, St. Louis, and Wichita, Nashville, Dayton, Albuquerque, and Los Angeles.

Messages to points not served by direct lines will go to the closest switching center and then be refiled via regular Western Union facilities, at a cost substantially less than a commercial telegram.

Consolidation of the systems is expected to account for approximately $100,000 a year in savings, much of it by elimination of parallel service.

Actual message-sending procedures for individuals will continue much as in the past. For example, messages will go by teleprinter from Astronautics home plant in San Diego to the switching center in the basement of Bldg. 19 at San Diego, and thence out over the network to destination. Once the message is "cut" on tape at the originating teleprinter, transmission becomes almost immediate.

The main objective in all three switching centers is to maintain a "no backlog condition." That is, messages are relayed through the centers to destination points with an absolute minimum of delay.

The system totally involves about 16,000 miles of leased lines. Main trunk lines process messages in two directions simultaneously at 100 words a minute.

JOHNSON NAMED TO AIA BOARD

Earl D. Johnson, president of General Dynamics Corporation, has been named to the board of governors of Aerospace Industries Association for 1962.

Johnson joins a select group of administrators of the nation's major manufacturers of airplanes and aerospace vehicles forming the governing body of the association.

August C. Esenwein, formerly of General Dynamics, was elected president for the coming year.



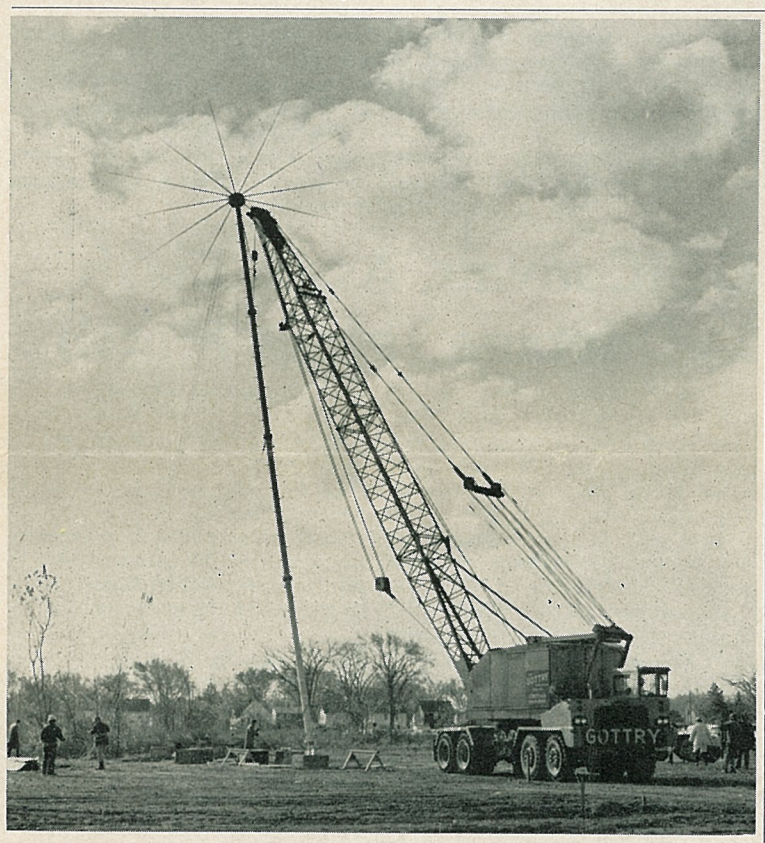
TICKER TAPE—Inspecting GD/Astronautics' switching center in San Diego are, from left, R. E. Bennis, corporate coordinator of wire communications; R. I. Morse, office services manager at San Diego corporate offices; W. W. Welton Jr., GD/Astro assistant supervisor, product support; and K. R. Aiken, GD/Astro logistics support manager.

Avoid Rush Mail Hours

In an effort to better distribute the mail handling burden during the day, U. S. Post Office authorities throughout the country are requesting that users avoid the rush period of 4:30 to 7 p.m. for all but the most important mail.

"About 70 per cent of the mail reaches the post office between those hours," R. I. Morse, office services manager at the San Diego corporate offices, reported. "Post offices are endeavoring to shift part of this load to the morning hours to more efficiently use their staffs."

Morse urged General Dynamics mail users, particularly during the Christmas season, to mail as much as possible during the forenoon. Their mail will be moved faster and more efficiently, he said. The appeal is part of steps taken by Dynamics to cooperate in the "Nation-wide Improved Mail Service" program of the U. S. Post Office.



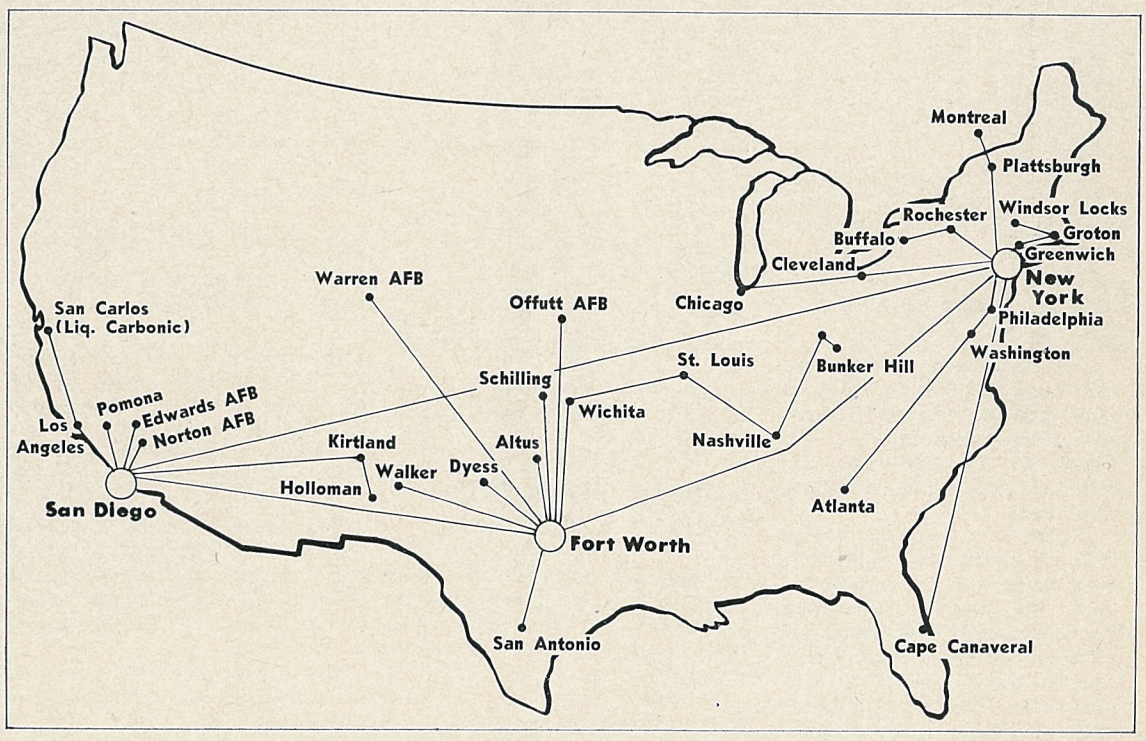
GOING UP—An 80-foot-high mast is erected at GD/Electronics, Rochester for testing military communications equipment being built for U. S. Air Force.

Commander Named To Bomb Squadron

Lt. Col. Joseph Schreiber has been named commander of the 63rd Bombardment Squadron at Carswell AFB. The 63rd is recognized as the world's first tactical supersonic bombardment squadron equipped with the Mach 2 B-58 Hustler. Dynamics builds the B-58 at Fort Worth.



TERRIER AND "HOME"—In upper photo is General Dynamics/Pomona plant at Pomona, Calif., where Terrier and Tartar missiles are built. Below, Terrier takes off during desert maneuvers of U.S. Marine Corps' First Medium Anti-aircraft Missile Battalion. Approximately 6,500 are employed at Pomona plant. Known as Naval Weapons Industrial Reserve Plant, it is operated by Dynamics for Bureau of Naval Weapons.



FAST AND FAR—Map illustrates General Dynamics Corporation's communications network as it will be when merged with GD/Astronautics Division's system. New York switching center will serve 20 stations, Fort Worth 25 and San Diego 40.



TURKEYS TUMBLE—More than 88 archers converged on Balboa Park Field Range for recent turkey shoot. Shown above before turkey target with "hidden heart" are (l-r), E. V. Green, Bob Wheeler, Danny and Dick Jones.

Astro Sons, Daughters Will Dance on Dec. 16

A special Christmas dance for GD/Astro sons and daughters will open a new round of activity for ARA Teen-Age Club, Dec. 16 in GD/Astronautics cafeteria.

Third annual event of its kind, the semi-formal affair will run from 7:30 to 11 p.m., with the "Vikings" playing for dancing.

Approximately 250 teen-agers are expected to attend. The event will be chaperoned by parents. Admission is by Teen-Age Club membership card, with each card admitting a member and guest, and one guest couple, without charge.

The Christmas dance is the first Teen-Age Club activity since the recent appointment of John H. Hess as ARA commissioner. Hess is a long-time worker in Teen-Age Club activities, and releaves Gil Hutter who has assumed other ARA responsibilities.

Hess has announced that GD/Astro employees may obtain new club membership cards for their teen-age dependents at all employee services outlets without charge.

"These cards are the teen-agers' passports to a year-long round of wholesome, well-chaperoned activity," Hess explained. "Parents are urged to obtain new cards as soon as possible."

Two Bands to Play For Dept.'s Dance

One of the largest departmental parties planned for the Yuletide season comes off Dec. 16 when product support employees at General Dynamics/Astronautics gather at El Cortez Hotel.

Over 1,300 tickets have been sold and another 700 are available through product support departmental clerks.

For this reason two of El Cortez Hotel's facilities—the International Room and the Century Room—have been reserved. Two bands, Buster Carlson and his ARA Band and Francis Leonard, will play from 9 p.m. until 1 a.m.

Professional entertainment, door prizes and corsages for the women will be featured. Reservations for groups are available by calling ext. 258, Plant 2.

ARA's Garden Club Will Meet Tonight

ARA Garden Club will meet at 7:30 p.m. tonight (Dec. 6) in the Floral Bldg., Balboa Park. The meeting was advanced one day from the previously announced Dec. 7 date, due to a schedule conflict.

Dahlia catalogs from Holland will be available at the meeting. Five turkeys will be awarded as door prizes.

Xmas Lights Banned For In-Plant Trees

Departments or groups considering in-plant Christmas trees and decorations this season were reminded by Fire Chief A. C. Anderson this week of regulations governing their use.

Lights or electrical wiring will be prohibited except on trees erected by plant maintenance for overall decoration. No combustible decorations are allowed. All trees must be inspected by the plant fire department. Call exts. 1811 or 1812 to arrange inspections.

Last Christmas there were 244 in-plant trees with no incidence of fire, Anderson said.

Panel Discusses 'Woman' Topic

Dynamic Toastmasters, their ladies, and Delta Toastmistresses were hosted by Maj. Ken Samples, USMCR, at the Admiral Kidd Officers' Club last week.

"Woman," was the controversial subject chosen for theme of the Nov. 30 dinner meeting. A selected panel discussed "interesting and unusual aspects of man's indispensable dilemma," reported Samples, past president of the Dynamic group.

John Belanick of Astronautics chaired the special session as current president.

Regular dinner and speaking meetings are scheduled each Thursday by the General Dynamics Toastmasters club. The organization is open to all GD men based in the San Diego area.

Information is available from Charles Willits, educational vice president, ext. 2265, Plant 1; Belanick, ext. 2143, Astro main plant; or Samples, ext. 2223, Plant 1.

XMAS TREES GO ON SALE

Eight hundred prime Washington state farm-grown Christmas trees go on sale to GD/Astro and GD/Convair employees at bargain rates Friday (Dec. 8).

Operated by Prophet Co., the tree lot will be located on the east side of Pacific Highway opposite Plant 1 outside Convair CRA Clubhouse. Sale hours will be 10 a.m. to 9 p.m. through Dec. 20.

Prices range from 79 cents to $4.25 on regular-sized trees. Larger trees will be available at slightly higher prices.

One-day service will be offered those desiring painted trees, although orders must be placed at the lot.

Convair parking lots are open to tree shoppers after normal shift hours.

Salvage Yards Skip Holiday Weekends

Salvage yards at both GD/Convair and GD/Astronautics will be closed during the coming holiday weekends. No employees sales will be made Dec. 23 or 30 at either site.

Following schedule at both divisions will be:

GD/Convair—Dec. 9 and Jan. 6.

GD/Astro—Dec. 16 and Jan. 13.

Match Play Tourney To Start in January

Entries will be accepted through noon, Dec. 11, from GD/Astro golfers to represent ARA in Industrial Recreation Council's match play competition starting in January.

Applicants must have an established ARA handicap in either the 9-14 or 15-25 bracket. Play will be on Saturdays at Torrey Pines and Balboa courses, and players will pay their own greens fees.

Interested employees may contact Dee at ARA Headquarters (ext. 1111) for registration or additional information.

Convair Golfers Win 31 Turkeys

Thirty-one General Dynamics families solved their Thanksgiving turkey problems at Convair Golf Club's Sweepstakes Nov. 18 and 19 at Bonita.

First and second place low gross scorers and the three leading low net golfers in each of four handicap brackets won prime birds.

Shooting low gross scores in 0-10 handicap class were Speed Martin with 74, and Walt Rye with 75. Low net honors went to Dick Tobias with 67, while C. B. Bagaloff, Alex Bezverkov and Harry Richards tied for second with 69, and Jack Ross, Dick Ransdell and Jack Weaver shot third-place 71s.

In the 11-13 handicap bracket, Ray Demitrowicz and Ed Caldwell led low gross scorers with 78 and 79 respectively. Low net was led by Harry Bodwell with 66, and John Mellett with 68. Chuck Hopkins, Jerry Swarts, Oscar Bowling and Mark Pruitt tied for third with 69s.

Fred Wells shot an 80 for low gross in the 14-21 handicap class, while Bill Marshall scored 81. Low net winners were Art Braidic with 66, Ivan Raney with 67, and Hal Heist, Ernie Stuchly, Phil Raney and Len Therrien with 71.

The 22-and-up handicappers were led by Charlie Walton (90) and Larry Broussard (92) for low gross, while "Frenchy" Desrosiers (68) won low net. Taking second place honors in net competition was Jim Rose with 71, while Lee Woll and Gert Silva shot 72s for third.

Robertson Assigned To Heller Survey

Three temporary executive assignments were announced at General Dynamics/Astronautics last week by J. R. Dempsey, president.

George M. Robertson, director of management systems, is on special assignment to work with Robert Heller and Associates, management consultants, on recommendations for improving Astro operating methods. Meanwhile, Paul D. Ferrara, chief engineer-administration, becomes acting director of management systems, and George E. Putness, formerly GD/Convair assistant chief engineer-administration, becomes acting chief engineer-administration.

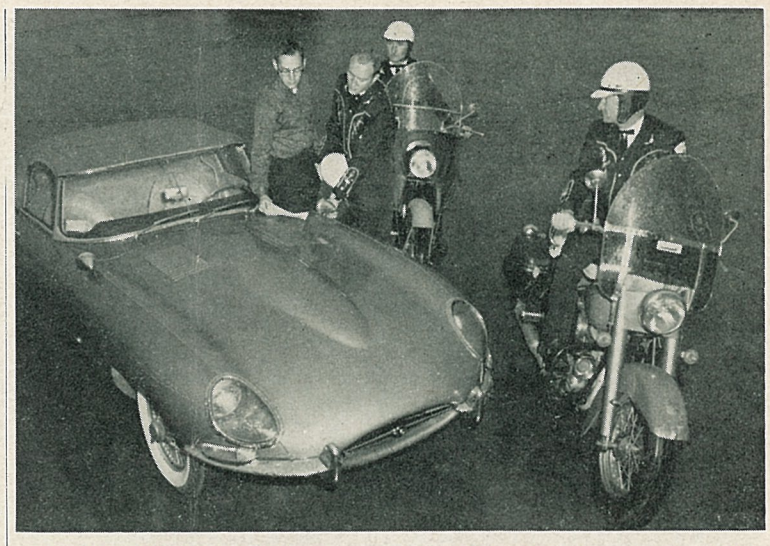
HOLIDAY SCHEDULE FOR YEAR-END SET

All General Dynamics divisions and facilities based in California, and Astro off-site bases, will enjoy two four-day weekends during the holiday season.

Holiday schedule this year will be Dec. 25 and 26 and Jan. 1 and 2.

The same dates apply to GD/Convair, GD/Electronics, including Information Technology facilities, GD/Astronautics plants at San Diego; off-site bases; and GD/Pomona.

Except for necessary security and maintenance functions, the plants will shut down for the four-day weekends on both Christmas and New Year's weeks. Work will resume as usual on Wednesdays, Dec. 27 and Jan. 3.



PLANNING SESSION—George Kendall, ARA Sports Car Club member and chairman of Del Mar sports car races Dec. 9 and 10, briefs Astro Motors members Jack Wachalec, Paul Shannon and Harmon Lewis in crowd control functions motorcycle group will perform. Car is new E-type Jaguar.

Members of Motorcycle Club To Help at Sports Car Races

Astro Motors, ARA motorcycle club, has been asked to assist with crowd control and escort work during sports car races at Del Mar Fairgrounds Dec. 9 and 10.

Ten club members wearing the group's white-trimmed black uniforms will be on hand. The Astro club was requested because of appearance and condition of equipment, and because several members are experienced in patrol work.

The Del Mar races are sponsored by the San Diego Region, Sports Car Club of America. George Kendall, member and past president of ARA Sports Car Club, will serve as race chairman, and other members of the club will assist.

Next regular meeting of the motorcycle group is slated for 7:30 p.m. today (Dec. 6) in ARA Clubhouse. On Astro Motors' latest outing Nov. 19, 27 club members vied for turkeys in a 60-mile "Gobbler Gambol" ending at Moreno Lake campground.

Winners received live turkeys—and advice on how to return the birds to San Diego on their motorcycles.

GD/Convair, Astro Clash In Doubles Tennis Match

Inter-divisional sports rivalry will hit a pitch when eight doubles teams from GD/Convair and GD/Astro clash in a CRA sponsored invitational tennis tourney Dec. 16.

This will be first tennis competition staged between the two cross-town divisions.

Slated for Morley Field, "B" bracket teams will get under way at 9 a.m. and "A's" at 11 a.m.

Pete Beyrer, CRA spokesman, said trophies will be awarded winners and runners-up in both brackets. Tourney balls will be provided and there is no entry fee, Beyrer added.

Stan Griffin will lead GD/Convair forces while Ben Cendali, ARA commisisoner, will head GD/Astro.

As "prep" for the impending battle, CRA tennis enthusiasts staged a "hodgepodge" tourney Nov. 18.

With chances of victory left to "lady luck," Fred Balata, Dean Whitney, John Struthers and E. Rothe collected turkeys by winning most games in a best of 20 competition.

Additional information concerning the Dec. 16 tourney can be obtained by calling Beyrer, GD/Convair, ext. 1245, Plant 1.

Field Trip Planned To Indian Mound

Astronautics' ARA Archaeology Society is making plans for a long field trip over the four-day New Year's holiday.

Headquarters will be at the American Legion Camp Ground on Highway 80 near Terra Del Sol. Center of attraction will be old Indian mounds. Plans call for a steak fry and party on New Year's Eve. A playground supervisor will be on duty to care for children.

Camping facilities are available. For further information, call ext. 1111.

AFPRO Club Hears Brig. Gen. Keeling

Brig. Gen. Gerald F. Keeling, USAF, commander, Western Contract Management Region, addressed GD/Astronautics AFPRO Management Club at the group's November meeting.

Some 80 members and guests heard Gen. Keeling discuss numerous challenges facing weapons system and space contract management.

Delbert E. Traeger, price analyst, received the club's "Man-of-the-Month" award for his contributions to AFPRO effectiveness.

GD/Astro's Entry Wins Queen Crown

Ingrid Leyrer, representing ARA Snow Ski Club, was named Queen of the San Diego Ski Association's Snow Ball last month. She competed with entries from five area ski clubs.

Next meeting of the GD/Astro club is slated for 7:30 p.m. today (Dec. 6) in ARA Clubhouse. Following a business session, ski movies will be shown. A turkey will be awarded as door prize.

The Astro group has scheduled a four-day trip to Sugar Bowl over New Year's, two weekend ski outings, and a full week's trip to Sun Valley during the coming season.

Bring $1 Surprise To Wives Luncheon

Next meeting of Astro Wives' Auxiliary will be a luncheon Dec. 13 at Catamaran Hotel, Pacific Beach. Social hour begins at 11:30 a.m.

The group's officers will serve as hostesses, and all attending have been asked to bring a $1 "surprise" (with donor's name attached) for a gift exchange. A turkey will be awarded as door prize.

Reservations are being taken by Mrs. John Horning, BR-7-4104, and Mrs. George Thompson, BR-8-1942.

Astro Men Honored For Scouting Work

Two Astronautics men were among 11 local leaders receiving the Silver Beaver award of Boy Scouts of America last week at Balboa Park.

Jack Hallman of Dept. 531-3 and Jim Tate of Dept. 243-1 were honored. The men were selected from 9,000 adult leaders.

Sports & Recreation

Jerry Neff, Jane Nuttal Top Bowling Winners

Jerry Neff and Jane Nuttal, new individual plant bowling champions, will head GD/Astro keglers receiving trophies at ARA Clubhouse at 5 p.m. Tuesday (Dec. 12).

They were all-events winners of the recent fourth annual ARA Plant Bowling championship Nov. 11-12 and 18-19 at Clairemont Bowl.

Neff put together an all-events total of 1,946 pins to cop honors in the men's division. Jane's 1,837 pins proved tops among the feminine participants.

Thirty-three trophies will be passed out by Commissioner Jack Boyle and his ARA bowling directors.

In addition, Dept. 322-8 will be honored as the year's winning departmental team, taking over the perpetual trophy held until now by Sycamore Canyon. Team members are Larry Pohl, John de Kerguelen, Ralph Trease, Alan Cohen and Bill Blood.

Other individual winners to be honored among the men are Ralph Morton for a 634 scratch series; Jim Epperly for a 254 scratch game; Ray Altmeyer and Don Flowers tied at 661 for men's singles (3 games); Jim Epperly for a 264 handicap game; and Neff for a 703 handicap series.

Women's honors among individuals go to Betty Chapman for a 238 scratch and a 252 handicap game; Nancy Tatum for a 582 scratch series; Vivian Hampy for a 661 singles (3 games); and Irene Dopkowski for a 672 handicap series.

Buck Walsh and Jim Epperly won the men's doubles event with Irene Dopkowski and Sue Nungezer taking mixed doubles honors.

The Nuts will be honored as the winning men's team with trophies going to Ben Labbate, Dale Dollison, Fred Pfeffer, Matt Fuller and Frank Puntney, captain.

Mixed team winners were the Alley Loafers including William Mountain, Bea Harman, Donald Quinlan, Gardner Beckner and Marion Hess, captain.

Fencing Clubs Host Tourney

The joint ARA-CRA Fencing Club again will host the annual San Diego Invitational Fencing Tournament slated from 1 to 8 p.m., Dec. 17 at the Downtown YWCA.

The largest competition of its kind in the San Diego area, the event is open to the public. Finals will begin about 6 p.m.

In other recent fencing activity, three club members took part in a Class "C" individual foil competition in Los Angeles Nov. 3. They were Dick Jones, GD/Convair Dept. 160; Ray McNamara, club president, GD/Astro Dept. 581-1; and Mike Hurley, ARA commissioner, Dept. 597-1.

On Nov. 10 a "swap" between the ARA-CRA organization and the San Diego Fencing Club permitted both groups to enter another Los Angeles event. A member of the San Diego club substituted for McNamara in a men's epee event, while Astro daughter Barbara Proppe joined the downtown club's women's foil squad.

Movido Wins Tennis Crown

Jack Movido was crowned GD/Astro men's singles plant champion by defeating the defending champion, John Cannan, 4-6, 6-1, 6-4, in the ARA-sponsored tournament completed recently.

Frances McBride captured the women's singles crown by default from Ruth Berry who was prevented from playing by an ankle injury.

In men's doubles, Cannan and Marsh Agrava downed Movido and Rob Sanchez in a hard-fought 7-5, 4-6, 6-3 match.

A consolation match, introduced by the ARA organization for the first time this year, provided additional play for men's singles contestants eliminated in the first round.

This was won by Don McClarren who defeated Ed Bennett 6-0, 7-5.

Trophies were presented to winner and runner-up in each championship flight, and to the consolation winner.

Trailer Members Visit Blair Valley

Nine trailers rolled along to ARA Trailer Club's outing at Blair Valley near Borrego, Nov. 18-19.

Club members visited Indian ruins in the vicinity, and took part in hiking, games, and the club's traditional Saturday night potluck.

At a business meeting last night (Dec. 5), the group made plans for a four-day outing over the New Year's holidays.

RIDING CLUB OFFERS STABLING FACILITIES, FEED CHARGE ONLY

ARA Riding Club offers a solution for GD/Astro sons and daughters who have asked Santa for a horse or pony this year, but who lack stable facilities.

The club corral and arena in the ARA Recreation Area has facilities for boarding members' horses, with no charge save for feed and periodic turns at feeding and cleaning up.

According to ARA Commissioner F. W. Augustine, six privately-owned animals are presently boarding at the corral, and there is room for more.

Club membership, required for use of the facilities, costs $5 per family per year. All GD/Astro employees are eligible.

Other advantages of membership include instruction periods in riding and care of horses, held each Saturday at 9:30 a.m. Additional information is available from Augustine at ext. 2964 or 1911.

PISTOL SHOOTERS COMPETE DEC. 10

Interested GD/Astro employees have been invited to take part in ARA Pistol Club's next matches at 9 a.m., Dec. 10 at San Diego Police Pistol Range.

In the club's late November shoot, Ralph Sanderlin was top contender, winning both the master class .22 Police Course match and the Center Fire round. Sanderlin fired 293 and 274 in the respective matches.

J. S. Knutson ranked second in master class with 284, while Don Smock (273) and Bob Geopfarth (266) led expert class contenders. Mort Williams and George Slater led the sharpshooters with 277 and 274 respectively, and among the marksmen Leo Berger (257) led John Bennett (256).

Second and third places in the Center Fire round went to Ken Bunker (269) and Russ Oliver (266).



WELCOME—Lovely Crystal Wright (Dept. 97) enthusiastically throws back her hands in a big welcome for all GD/Convair and GD/Astro hunters to attend CRA's annual "Big Game" night Dec. 9. Giving her "help" are (l-r), Carl Monds, Bob Cushman, Lou Steiner, Jay Cushman, "Gunner" Gatterman and Howard Jacklin.

'Double-Barreled' Weekend Slated by ARA-CRA Hunters

A weekend of "double-barreled, high-velocity" events is planned when General Dynamics hunters converge on Gillespie Field Clubhouse for the "Big Game" drawing Dec. 9 and the Christmas Shoot Dec. 10 and 13.

Open to all GD/Convair and GD/Astro employees, "Big Game" night will get under way with a night trap-shooting exhibition at 7 p.m.

Crystal Wright, "Miss Convair Hunter-1961" will assist in the drawing, Jack Swank, CRA commissioner, announced.

First prize winner will have choice of a ribbed-barrel maple wood Winchester shotgun or a .308 Remington automatic loader rifle.

Swank said over 100 hunters have submitted their "kills" and that entries will be taken until the drawing.

Gun Clubbers can follow up the drawing activities Sunday (Dec. 10) or Wednesday (Dec. 13) by entering the ARA-CRA Christmas Shoot.

Beginning at 9 a.m. Sunday and 7 p.m. Wednesday, competition will be held in trap, skeet and skee-trap shooting.

Swank said prizes will be of "hodgepodge" variety including "top-shelf" bourbon, dinners at the Cotton Patch, hunting and kitchen accessories, jewelry and hams.

Entry fee is $1.00 a person.

Other activities slated for "Big Game" night will include presentation by Arnold Schrock of his hunter safety graduating class, an exhibition of reloading equipment for shotguns and rifles and guest talks by fish and game officials.

Swank extended a cordial invitation to shooters, beginners and experts, to join in the weekend's festivities.

ARA Calendar

(GD/Astronautics Recreation Association has some 45 activities in operation for employees. For information, call ARA Headquarters, ext. 1111.)

★ ★ ★

ASTRO LENS — Christmas party at 7:30 p.m., Dec. 17, Photo Arts Bldg., Balboa Park. All members urged to attend.

ASTRO NOTES—Meeting and rehearsals every Monday, 7:30 p.m., ARA Clubhouse. New members in all voice ranges needed.

BRIDGE — Regular play, 7:30 p.m., Thursdays, Barcelona Bridge Club, Fourth and Juniper.

FENCING — San Diego Invitational Tournament hosted by ARA-CRA Fencing Club, 1-8 p.m., Dec. 17, Downtown YWCA. Finals about 6 p.m. Public invited.

GARDEN CLUB — Meeting tonight (Dec. 6), 7:30 p.m., in Floral Bldg., Balboa Park. Turkey door prize.

PISTOL CLUB — Matches, 9 a.m., Dec. 10, San Diego Police Pistol Range.

TEEN-AGE CLUB — Semi-formal Christmas dance, 7:30-11 p.m., Dec. 16, in GD/Astro cafeteria.

WIVES' AUXILIARY—Luncheon meeting, 11:30 a.m., Dec. 13 at Catamaran Hotel. Turkey door prize. $1 gift exchange.

WIVES' GOLF — Reservations for January lessons at Mission Valley Country Club, and information on other golf activities available from Mrs. John Gissell, BR-7-4325.

Modelers Name New Officers

New officers of Astro Modelers, ARA model airplane club, were elected at the group's November meeting.

New president is Lawrence Washalaski, with Jim Baron, vice president, and Lawrence Woolley, secretary-treasurer. Bob Davis was appointed activities director.

The election meeting also featured a hand-launched glider contest in ARA Clubhouse auditorium.

The club's second annual Thanksgiving contest and flight outing was held Nov. 26, with heavy "Nordic Glider" participation.

The club meets regularly at 7:30 p.m. in ARA Clubhouse, the first Wednesday of each month. C. M. Ogle is ARA commissioner.

CRA Archers Act as Host For Annual IRC Tourney

Close on the heels of a highly successful turkey shoot, GD/Convair's Archery Club will host the eighth annual IRC and San Diego Park and Recreation Association tournament Dec. 10.

Open to all employees and their families of IRC member firms, registration will take place at 8:30 a.m., Balboa Park Field Range.

Morning shooting will feature 28 field shoots with 14 animals and 14 hunters following in the afternoon.

Jack Garside, GD/Electronics in Rochester, will spearhead a drive to round up Rochester archers for a projected east and west coast, all-General Dynamics archery tournament, Paul Neuman, director of recreation for GD/Electronics, announced.

Al Phipps, CRA commissioner, said entries will be taken until registration closes and that a fee of $1.50 per adult and 75¢ for intermediates and juniors must accompany each entry.

First-place trophies will be awarded in all divisions where there is competition, (four in a division is considered competition).

In other Archery Club news, plans to stage an all-General Dynamics tourney which will include participants from both western and eastern divisions are under way.

Phipps, who is spearheading the drive to gain corporation-wide participation, said the "competition by mail" shoot will pit some of the nation's top archers against each other.

"We hope to kick this thing off about the first of the year with results being mailed here and team standings published periodically in General Dynamics NEWS," Phipps commented.

Various classes of competition depending on age and ability will be established so that both beginners and experts will have a chance to compete for prizes.

Phipps asked for a "show of hands" in the form of letters from other division commissioners or groups interested in taking part.

Additional information can be obtained by writing:

W. A. Phipps
2318 Upas Street
San Diego 4, California



BEAUTY AND BOWS — Kathy Duncan, California's "Miss Archery," poses with Commissioner Elmer Dahlstrom, left, of GD/Pomona, and Al Phipps, GD/Convair commissioner.



ALL-WEATHER—Tactical B-58 Hustler streaks skyward through fog and mist on another simulated combat sortie from base at Carswell AFB, Fort Worth.

Sharpshooting Cameras Answer 'Elbow Room' Questions in B-58

How much "elbow room" does an airman need to operate safely inside a B-58 escape capsule? Precisely where should critical equipment be placed, assuring the Hustler crewmen maximum safety and comfort in flight and during high-speed ejection?

These and a host of other thorny questions were answered by pioneering General Dynamics/Fort Worth engineers before the first production capsule—now being static-tested—could be assembled.

Prime consideration had to be given both to the airman's size and body attitude during positioning for ejection.

"We had to figure a way to measure the distance of various body parts during a few vital postures," said John W. Chaffee, senior design engineer who holds a degree in physical anthropology from University of North Carolina.

"This is quite a new problem. Universities hadn't done any work to speak of in the field, and at that point the Air Force hadn't done much research in body-size requirements for supersonic escape. Obviously, direct physical measurement during simulated movements would be imprecise and too time-consuming."

To solve the problem, Chaffee turned to "andrometry," his own coined word which means measuring man by special photography. The method is similar to that used in aerial mapping.

He selected 24 GD/FW volunteers who fall within the minimum and maximum size ranges required for Hustler flying duty.

Each of the men was placed in a simulated capsule, where he went through various maneuvers. Two 8x10 view cameras with long focus lenses, placed at 90 degree angles to each other, clicked away during these movements. Another overhead camera was also used on occasion.

"Our method produced negatives which included the test subject, certain fixed reference points, and a stationary seat reference point (SRP) from which all measurements were made," Chaffee said.

"The position of each visible anatomical point on the body appearing on the negatives was then measured on the negatives with respect to its distance from the SRP."

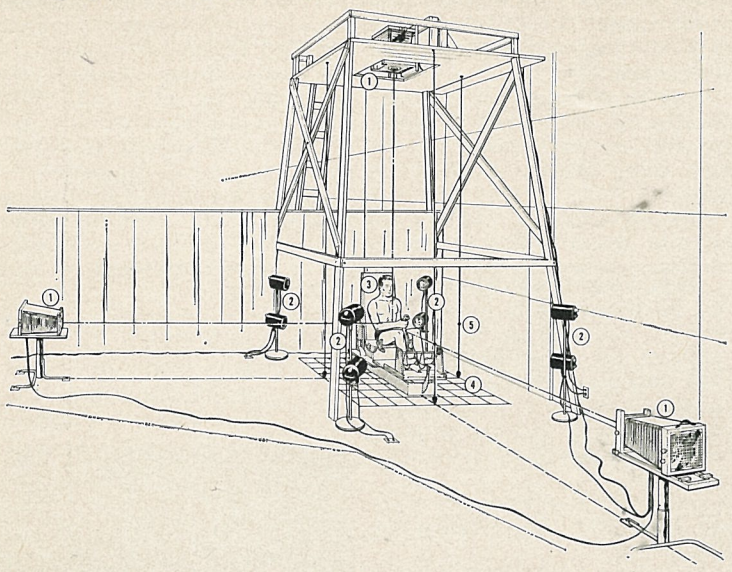
These datae were then used to establish minimum internal dimensions of the capsule, as well as the most desirable location for arm rests, head rests, and necessary restraint devices.

Final dimensions called for a capsule that would conveniently accommodate the middle 90 per cent of men physically qualified to fly in Hustlers.

"Andrometry has some decided advantages," Chaffee said. "Since negatives form a permanent record, a later analysis of them may be made to obtain various type data other than that originally required. It also makes it easier to check in cases of apparent errors in tabulation—a common thing in survey-type work."



RESULTS—John W. Chaffee, GD/FW physical anthropologist, inspects negatives on which men's movements were measured precisely. Photographer Aaron Murray, who helped arrange complex photograph coverage, took picture.



"ANDROMETRY"—Method for photographing movements of volunteers in simulated B-58 escape capsule is shown in artist's drawing. (1) Cameras; (2) Strobe lights; (3) simulator; (4) reference grid; (5) fixed reference points.

Missile and Aircraft Leaders Briefed On Terrier, Tartar, Redeye at Pomona

Nearly 70 leaders of Southern California's missile and aircraft industry visited General Dynamics/Pomona Nov. 15 for briefings on the Tartar, Advanced Terrier and Redeye missile programs.

Included in the group were administrators and engineers from North American, Marquardt, General Electric, Northrop, Hughes, Aerojet-General, Lockheed, Douglas, Radioplane, Aeronautics, Litten, Meletron, Jet Propulsion, Rocketdyne, Borg-Warner, General Motors, Autonetics, Astropower, Forsnas, Aerospace, Avien, Space Recovery, Ballistics Systems, New York Air Brake, Menasco, American Astrophysics, American Metal and Western Aircraft.

All are members of the Institute of Aerospace Sciences.

A confidential-level briefing on the three guided missiles was authorized by the Bureau of Naval Weapons and Office of Chief of Ordnance.

First Woman Flies Mach 2 in F-106

Carol Johnson of the Newhouse Broadcasting Corp. may be the first woman to make a Mach 2 flight in a Convair F-106.

Women's editor of radio station WSYQ, Syracuse, N. Y., she made the supersonic flight while covering the William Tell weapons meet at Tyndall AFB, Fla. So far as it is known, no other woman has made a Mach 2 flight.

GD/E's Versatile 4020 Recorder Performs Varied Astro Tasks

A device which automatically plots detailed graphs, writes out pages of technical data, and prepares drawings, is now in use at General Dynamics/Astronautics by telemetry data processing (Dept. 591-5).

The 4020 High Speed Microfilm Recorder built by GD/Electronics' Information Technology group provides rapid means of displaying, reproducing and storing information processed by GD/Astro's IBM 7090 computer.

Heart of the 4020 is GD/Electronics' Charactron shaped-beam tube which enables it to "write" up to 15,000 letters, numbers or characters per second. In a like interval, the high intensity, high resolution tube can draw 2,500 straight lines between pairs of given points, or generate up to 1,000 horizontal or vertical axes.

Computer information is translated into characters which the 4020 records with two 35 mm cameras.

One camera produces high quality film strips suitable for long-term storage. (One small roll of microfilm contains information which would fill a four-drawer filing cabinet with paper documents.)

The other turns out pictures on the spot. These are developed by the 4020 and displayed on a large screen within eight seconds after exposure.

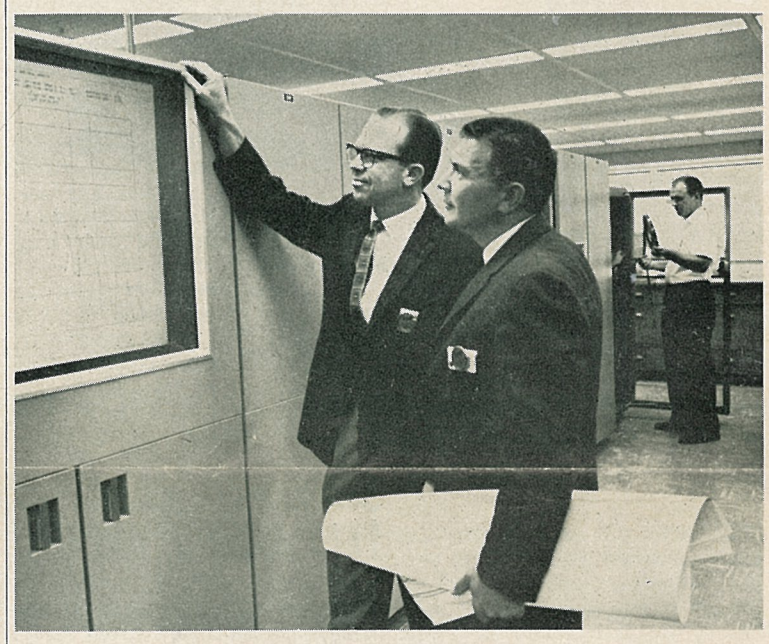
Presently the 4020-7090 combination is used on such projects as preparation of flight test reports, laboratory test data, trajectory studies, etc. These tasks utilize the 4020's skill at precision plotting of graphic information.

"By former manual methods, draftsmen used information from the computer to plot several points on a curve," explained H. E. Pietsch, research group engineer. "In a fraction of the time required for the manual task, the 4020 presents a more accurate picture by utilizing several times as many points in drawing a plot."

In handling printed material, the 4020 can produce a typical magazine page in less than a second.

"After several months of use, we are still finding new uses for this versatile equipment," Pietsch added.

Working with Pietsch to explore the 4020's capabilities are C. C. Dragila, research group engineer, and K. Leon Montgomery, research engineer.



PLOTTER—H. E. Pietsch and C. C. Dragila of GD/Astro examine large-screen projection of annotated graph drawn by GD/Electronics' 4020 High Speed Microfilm Recorder, while W. D. Thompson, rear, prepares another computer tape for insertion. Dragila holds blueprint-size "Copyflo" print made from 4020 presentation.

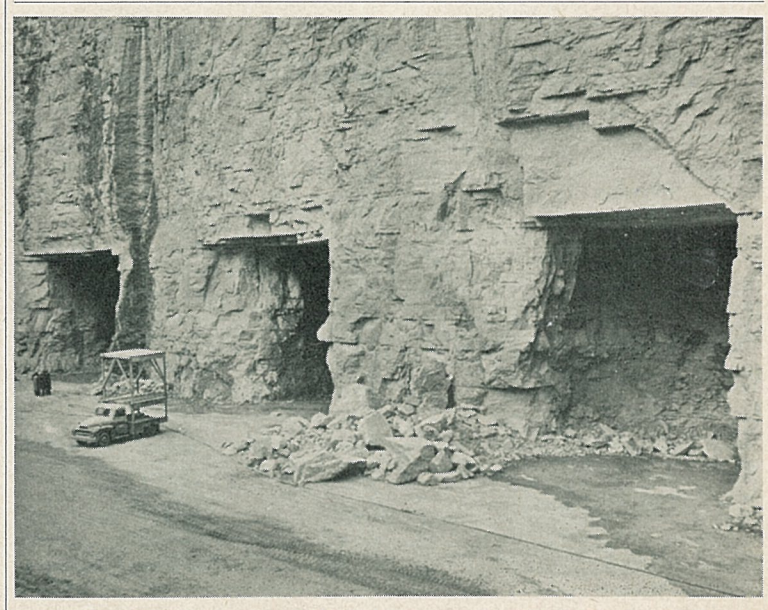
San Diego City College Educators Tour GD/Convair Production, Flight Facilities

H. W. Rubottom, GD/Convair chief of educational services, conducted three San Diego City College administrators on a tour of General Dynamics/Convair production and flight facilities late last month.

Walter L. Thatcher, City College director, Joseph H. Stephenson, dean of trade and technical education, and Walter G. Coats, coordinator of technical education, saw the 880-M and 990 assembly line, and inspected completed aircraft on the flight line.

Since City College technical program contributes to GD/Convair training, the visit was arranged to demonstrate effectiveness of cooperative training, said Rubottom.

According to Thatcher, the tour pointed up the close relationship existing between local industry and City College as the school strives to meet varied educational and training needs of the community.



SHELTERS—Chicago Civil Defense authorities have eyed old (over 100 years) stone quarry owned by Material Service Division of General Dynamics as possible bomb shelter. Located only 15 minutes from Loop, it is 350 feet deep with massive caves running laterally.

A Merry Christmas to ALL General Dynamics

Since my last Christmas and New Year message to you, our country has had one more year at peace. All of us in General Dynamics can take pride in the share our Corporation has played in contributing to the stability and strength of the free world.

1962 promises to be another demanding year. Threats from Communism, economic competition from abroad, and requirements for increasing efficiency at home will make for a year of hard work and change. We Americans are strangers to neither. We can take pride in the qualities of initiative, determination and imagination which are ours to draw upon for the tasks and opportunities ahead.

As we assess the future at this year end, it is wise for us to remember once again that as a nation and, I might add, as a corporation we can accomplish much as a team, but that no team is better than the effort made by its individual members.

To each one of you may I express thanks for your contribution during the past year. Your Board of Directors joins me in all good wishes for Christmas and the New Year. May the traditional joys of family, of giving, receiving and sharing, be yours to the fullest.

Frank Pace Jr.
Chairman of the Board

GDDDDDD

ASTRONAUTICS EDITION
(OFF-SITE)

GENERAL DYNAMICS
NEWS

Vol. 14, No. 26 — PUBLISHED BY GENERAL DYNAMICS CORPORATION — Wednesday, December 20, 1961

Warren Atlas Sites Finished Ahead of Sked

WARREN AFB—Approximately five weeks ahead of original schedules, the final Atlas launch complexes under construction at this Wyoming base have been turned over to the Strategic Air Command.

This is Warren III.

Ceremonies at the base and also at Complex 11 near Nunn, Colo., on Dec. 12 marked completion of tasks associated with activating these series "E" or semi-hard launch facilities.

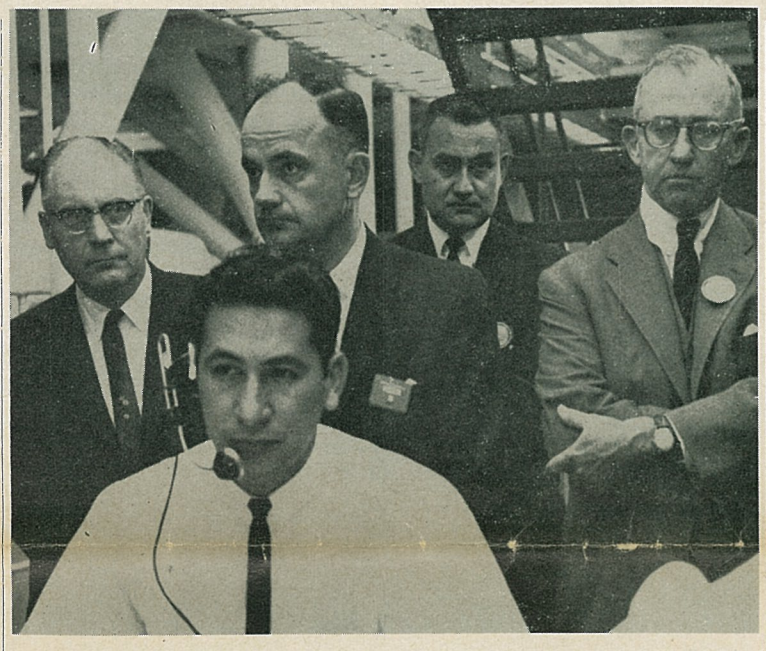
Col. W. E. Todd, SATAF commander here, praised General Dynamics/Astronautics and all associate and subcontractors on the project for completing these facilities well ahead of schedules.

"While final figures are not available at this time, it is estimated your efforts have saved an estimated $1 million for the Department of Defense and the taxpayer," Col. Todd said.

Among GD/Astro executives taking part were Mortimer Rosenbaum, executive vice president; P. M. Prophett, director of base activation; W. L. Van Horn, Atlas program director; E. J. Huntsman, base activation manager for "E" and "F" bases; and L. I. Medlock, GD/Astro operations manager here.

Air Force officials attending included Maj. Gen. D. R. Ostrander, vice commander, BSD; Brig. Gen. W. N. Rader, 13th Air Division commander; Col. Todd; Col. George T. Chadwell, 389th Strategic Missile Wing commander; and Col. James W. Yeater, 566th

(Continued on Page 2)



INTENT—Absorbed in composite test of Atlas missile at GD/Astro, being conducted by engineer Oscar Rendon, are, from left: W. P. Gullander, Dynamics executive vice president; Dr. J. V. Charyk, Under Secretary of Air Force; W. W. Withee, Astro vice president-research and engineering; and Frank Pace Jr., chairman of Dynamics board of directors.

GD/Astro's Pay Checks Will 'Grow' Next Month

Beginning early next year, General Dynamics / Astronautics employees will take home bigger (physically) pay checks! The new ones are nearly 15 inches long.

While dimensions of the check itself remain unchanged, a newly-enlarged detachable stub accounts for the increased length, and permits inclusion of additional payroll information for each employee.

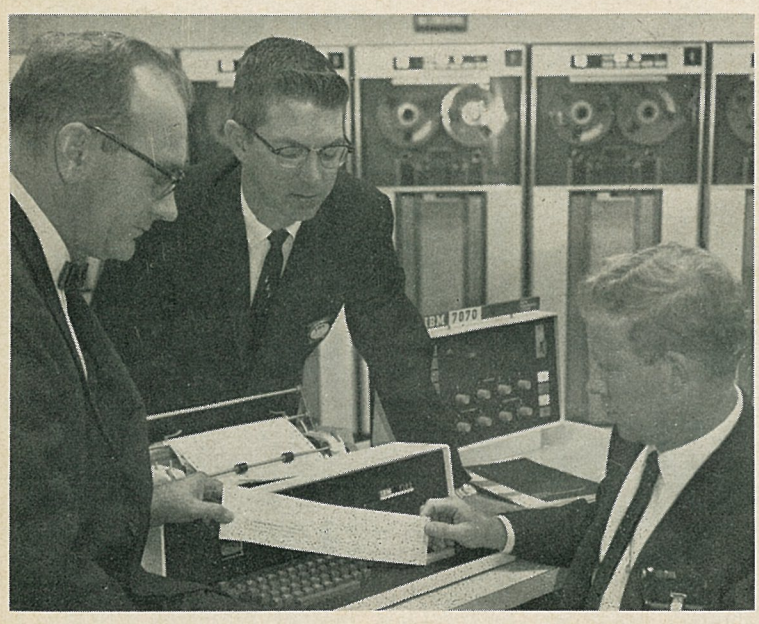
The change in check format will result from use of GD/Astro's newly-acquired IBM 7070 computer system to handle payroll and print the checks. Using magnetic tape as an information storage medium, the computer will handle the complete payroll in five hours, compared to nearly five days for the present punched-card method.

Newly added to check stub listings are such items as specific breakdowns of hours worked (regular time, overtime, vacation, sick leave, etc.); total taxes withheld and total deductions; and "year to date" totals for social security and disability insurance deductions.

In addition, the new stub notes employee and dependent group insurance charges individually; itemizes association dues withheld; includes tool deductions; and indicates tool balance remaining.

Deserving careful attention is the employee's social security

(Continued on Page 2)



NEW LOOK—GD/Astro's new long payroll check holds attention of C. E. Chapman, payroll supervisor; E. A. Gingrich, senior programmer; and A. N. Hubbs, supervisor.

Does GD/Astro Have Your Right Address?

GD/Astro employees who have moved during 1961 are asked to be sure their new address is on file with the company. Cards for this purpose are located at all time clocks.

Preparation of W-2 forms for 1961 income tax returns will begin in the near future, and up-to-date address information is required to insure prompt delivery to all employees. Distribution will begin late next month.

Gullander Given New Responsibility; Famme GD/Convair President

W. P. Gullander's responsibilities as executive vice president of General Dynamics last week were extended to include the Corporation's western divisions, as well as the eastern divisions which have reported to him for some time.

The announcement was made at a Board of Management meeting in San Diego. Henceforth, all division executive heads report to him. Gullander and all Corporate staff executives continue to report to Earl D. Johnson, Dynamics president.

At the same time, J. H. Famme, formerly GD/Convair vice president and general manager, was named GD/Convair president.

To fulfill his expanded duties, Gullander is expected to divide his time between San Diego and New York headquarters, according to the press of business.

Gullander came to General Dynamics in 1960 after eight years as vice president-finance of the Weyerhaeuser Co., of Tacoma, Wash. A native of Big Rapids, Mich., and graduate of the University of Minnesota, Gullander was with General Electric Co. for 22 years, holding executive posts including chief traveling auditor and manager of subcontract operation for the Aircraft Gas Turbine Division and district manager, secretary and treasurer of the General Electric Supply Co.

Famme, veteran Convair engineering and production executive, was director of manufacturing development for western divisions when he was assigned to GD/Convair last spring as assistant division manager-operations and later was vice president and general manager. He has been with the company more than 25 years.

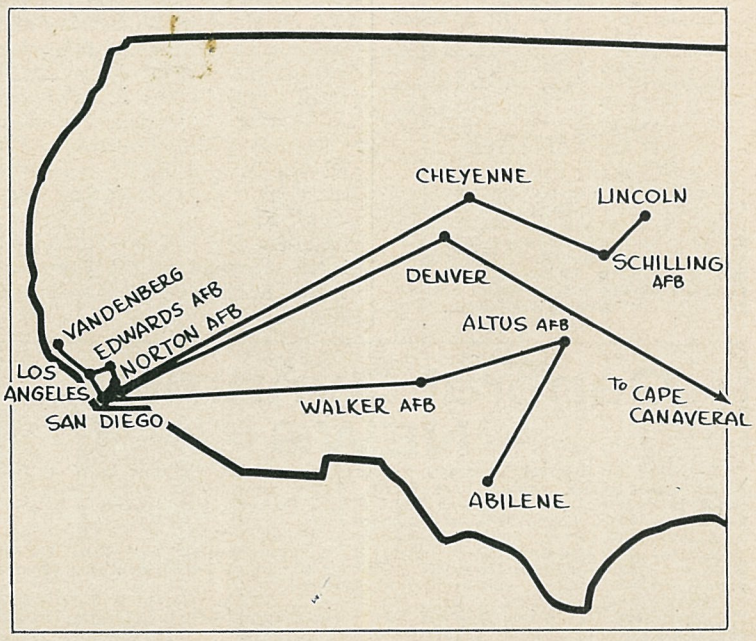
Airlift Adds Another 240

An additional Convair 240 aircraft has been made available to General Dynamics/Astronautics and was pressed into service last week supporting Atlas missile bases in New Mexico, Oklahoma and Texas.

With GD/Convair flight crews, the airlift operates eastbound on Monday, Wednesday and Friday. It travels direct to Roswell, N.M., (Walker AFB), then moves on to Altus AFB, Okla., and terminates at Abilene, Tex. (Dyess AFB). The following day it reverses this route in returning to San Diego.

Like other airlifts supporting Atlas test and operational bases, this service provides a means of swift movement of urgent, critical material needed in the program. At the same time it affords direct passenger capabilities normally not available

(Continued on Page 2)



MANY DIRECTIONS—Multiple airlifts being flown in support of Atlas missile program are reflected here. A new service, utilizing Convair 240 aircraft flown by GD/Convair pilots, went into operation last week. It connects San Diego with Roswell, Abilene, and Altus.

Log Book Entries

Official Notices

GD/Astronautics payroll next year will be run on a computer and new checks including employee's social security number and address will be issued.

These two items on each check should be compared with employee's social security card number and home address. Payroll (Dept. 191) should be notified immediately of a difference in social security number, and/or a change of address form processed for a difference in address.

Correct recording of these items is important to each employee.

C. E. Chapman,
Supervisor, Dept. 191.

Promotions

MAIN PLANT

Promotions to or within supervision effective Dec. 4.

Dept. 101-1, Business Data Processing: To clerical supervisor, R. T. Johnson.

Dept. 144-2, Support Quality Control: To inspection asst. supervisor, R. Gross.

Dept. 170-4, Organization and Systems: To clerical supervisor, C. R. Bowen. To office services asst. supervisor, E. D. Caggiano.

Dept. 193-2, Industrial Accounting: To accounting asst. supervisor, J. E. Neff.

Dept. 210-0, Operations Administration: To factory methods supervisor, T. R. McColloch.

Dept. 220-1, Manufacturing Control: To manufacturing control asst. foreman, R. W. Landis.

Dept. 250, Plant Engineering: To asst. foreman, C. W. Carlson, J. McMinn, L. G. Mulryan.

Dept. 322, Support Publications: To support publications supervisor, G. D. Hone. To support publications asst. supervisor, C. P. Rose.

Dept. 333-2, Off-Site Logistics: To support logistics asst. supervisor, J. R. Benson, E. T. Schaechterle.

Dept. 351, Field Modification: To inspection general supervisor, F. B. Shockley. To support calibration group engineer, N. A. Benson. To inspection asst. supervisor, B. W. Paul. To asst. foreman, D. K. Bostick.

Dept. 510-3, Engineering Management: To asst. project engineer, P. J. Swanson.

Dept. 521-2, Engineering Administration: To engineering task control asst. supervisor, A. E. Holzman.

Dept. 833-1, Stores and Traffic: To receiving and stores asst. foreman, G. K. Parker.

AFMTC

Dept. 571, GD/Astronautics Operations: To asst. foreman, D. R. Gowin.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To activation engineering asst. supervisor-base, James Bone, E. H. Erickson, R. E. Porter, B. P. Stanton, M. R. Wick. To asst. foreman, F. M. Grieco, D. R. Harwood, W. E. King, O. R. Shultz, E. H. Mitchell. To transportation asst. foreman, H. R. Hensley.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To asst. foreman, J. F. Dana, L. E. Lewis, B. F. Szakaly.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To production control foreman-base, S. J. Middleton. To inspection supervisor, L. M. Pisz. To launch complex asst. supervisor, L. Spurgeon.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To site engineering asst. supervisor-base, R. C. Cook. To asst. foreman, F. A. Zaccagnino.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To cost control supervisor, J. E. King. To inspection asst. supervisor, C. A. Koehler, M. W. Vittitow.

Service Emblems

MAIN PLANT

Service emblems due during the period Dec. 16 through Dec. 31.

Twenty-year: Dept. 191-0, Merne Johnson; Dept. 220-6, A. E. Mack; Dept. 335-3, J. W. Guihn; Dept. 450-0, J. C. Duffy; Dept. 523-2, H. H. Waugh Jr.; Dept. 579-5, L. D. Brown Jr.; Dept. 604-0, C. W. Shoupe; Dept. 773-0, G. C. Lang.

Fifteen-year: Dept. 521-7, C. P. Freeman; Dept. 759-0, G. W. Stacy Jr.

Ten-year: Dept. 145-0, H. O. Wendt; Dept. 152-0, E. S. Armstrong; Dept. 153-0, J. A. Thornbury; Dept. 170-1, C. E. Shuler; Dept. 250-3, E. L. Brush; Dept. 324-3, W. E. Martin; Dept. 404-0, D. J. Boatwright; Dept. 451-0, B. A. Brinkman; Dept. 461-0, Hazel M. Boyle; Dept. 599-5, R. R. Loomis; Dept. 759-0, J. R. Johnson; Dept. 844-1, F. A. Seaborg.

ALTUS AFB

Ten-year: Dept. 617-3, J. R. Mercier.

EDWARDS RS

Ten-year: Dept. 575-3, O. B. Eustice.

FORBES AFB

Ten-year: Dept. 614-8, H. J. Herod.

LINCOLN AFB

Twenty-year: Dept. 616-1, L. O. Miller.

WALKER AFB

Ten-year: Dept. 619, W. G. Hawkins, A. V. Martinez.

Personals

MAIN PLANT

We wish to express appreciation to GD/Astronautics Employees' Con-Trib-Club and the Emergency Aid Committee for their generous assistance during my recent illness. Their timely aid prevented loss of our home, by relieving the added financial burden during our emergency.

Donald Cox (Dept. 344-2)
and family.

Births

MAIN PLANT

BALDWIN — Son, John William, 8 lbs., 5 oz., born Nov. 27 to Mr. and Mrs. John G. Baldwin, Dept. 324-3.

KRUGLE—Son, Scott Alan, 6 lbs., 2½ oz., born Oct. 24 to Mr. and Mrs. Jacob C. Krugle, Dept. 451.

SCOTT—Son, Cabray W. Jr., 7 lbs., 6½ oz., born Nov. 30 to Mr. and Mrs. C. W. Scott, Dept. 220-3.

SCHILLING AFB

GHIELMETTI—Son, Geffery Bryan, 8 lbs., 8 oz., born Dec. 5 to Mr. and Mrs. Jack Ghielmetti, Dept. 615-5.

WEBER—Daughter, 8 lbs., 5 oz., born Nov. 30 to Mr. and Mrs. R. G. Weber, Dept. 615-9.

VANDENBERG AFB

EVANS — Son, Theodore Michael, 9 lbs., 2 oz., born Nov. 21 to Mr. and Mrs. Dexter Evans, Dept. 576-4.

FALSTAD—Daughter, Dana Kathleen, 7 lbs., 7 oz., born Nov. 24 to Mr. and Mrs. Ken Falstad, Dept. 576-8.

GENSICKE—Daughter, Kay Denise, 7 lbs., 12 oz., born Aug. 29 to Mr. and Mrs. E. H. Gensicke, Dept. 324-1.

LeCOURIS — Son, Brian Constas, 7 lbs., 2 oz., born Aug. 25 to Mr. and Mrs. C. P. LeCouris, Dept. 324-1.

PASTOR — Son, Daniel Harrison, 7 lbs., 7 oz., born Sept. 2 to Mr. and Mrs. Daniel H. Pastor, Dept. 324-1.

WAFTER—Daughter, Dawn Marie, 6 lbs., 9 oz., born Oct. 23 to Mr. and Mrs. James Wafter, Dept. 576-3.

WIERZBICKI—Son, Mark John, 7 lbs., 14 oz., born Oct. 26 to Mr. and Mrs. Ben Wierzbicki, Dept. 576-1.

Deaths

MAIN PLANT

FIFE—James F., Dept. 536-3. Died Dec. 12. Survived by parents, Mr. and Mrs. J. W. Fife; brother and sister.

MAGUIRE — Willie F. (Guard Captain), Dept. 130-1. Died Dec. 12. Survived by wife, Velma.

MONGER—Mary Ellen, Dept. 101-6. Died Dec. 13. Survived by sons, Teddy Ray (13) and Gary Dean (10); mother, Mrs. Francis Gingrich.

Atlas Sites Finished Ahead of Schedule

(Continued from Page 1)

Strategic Missile Squadron commander.

Completion of Atlas activation at Warren gives the Air Force its first all-missile wing, the 389th SMW. Its facilities include Warren I, II and III.

Maj. Gen. Ostrander, on behalf of Maj. Gen. T. P. Gerrity, BSD commander, presented Medlock with the "Commander's Award." This is a special recognition for his services to BSD and the Air Force. Col. Todd received an Oak Leaf Cluster for his AF Commendation Medal.

Warren III is the third and final series "E" operational base. Earlier this year "E" series facilities were completed at Fairchild AFB, and Forbes AFB.

Airlift Adds 240 To Connect Bases

(Continued from Page 1)

through other means. A recent division notice directs that all employees utilize the airlifts whenever possible for passenger service on a seats-available basis.

Travelers must have an official travel order or authority to travel as guests of General Dynamics. All reservations must be made in advance with the Astronautics reservation center, ext. 636.

Other airlifts available include: a Convair 240 service to Warren AFB, Schilling AFB and Lincoln AFB on Monday, Wednesday and Friday with returns the following day; a round-trip daily flight (week days) to Los Angeles and Vandenberg AFB; direct service to Norton AFB, Edwards AFB and Vandenberg AFB; and three round trips weekly to Cape Canaveral, Fla.

Airlifts depart from San Diego at the Convair Flight Terminal at the north end of Lindbergh Field.

General Dynamics NEWS

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GD/Electronics (San Diego) news contacts: Info. Tech., Helen Wood, CY-8-8331, ext. 11; Milit. Prod., Betty Freeby, CY-8-4641, ext. 1377.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50. P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.



BIG WRAP—Most of 119 GD/Astro folk who turned out to wrap gifts for annual Christmas party for needy children last Saturday are shown here, with results of their work. More than 600 gifts were wrapped, tagged, sorted and placed under tree.

Atlas 4-A Pioneers Sought in Survey

CAPE CANAVERAL — An attempt is being made to locate all present and former employees who were here when Atlas 4-A was launched.

Atlas 4-A was the first Atlas missile slated for flight test. It was launched from Complex 14 here June 11, 1957, by a crew headed by John Harrison, test conductor, with K. W. Jeremiah as chief test conductor.

Those who were on hand are asked to forward an "AVO" to the Base Manager, General Dynamics/Astronautics, Box 999, Cocoa Beach, Fla., which includes his or her correct name and present mailing address.

GD/Astro Checks Will 'Grow' in '61

(Continued from Page 1)

number now added to the check itself to insure that earnings are credited to the proper employee's account.

And the employee's address now appears on the check stub.

"We feel use of the new stub format will assist employees in maintaining personal records of earnings and deductions," explained C. E. Chapman, payroll supervisor (Dept. 191). "It also provides an extra margin of error prevention."

"The matter of address is a case in point," he added. "This information is important for tax purposes and its appearance on the stub may remind employees to report any address changes they may have during the year."

The IBM 7070 computer prints check information at a rate of 600 lines per minute, turning out 200 checks in a like period. All payroll information (including tax computations for 12 states, due to GD/Astro's wide-spread base activation operations) is now contained on one roll of magnetic tape.

This same data previously filled 30 trays of punched cards.

The compact 7070 is fully transistorized. It reads 42,000 characters per second, making 1,650,000 logical decisions in a minute!

Change-over from cards to tape has been under way in GD/Astro's business data processing (Dept. 101-1) for nearly six months, under direction of G. R. Jacob, general supervisor; Bruce Piper, supervisor; and E. A. "Mike" Gingrich, senior programmer.

Xmas Decorations Banned After Dec. 22

General Dynamics / Astronautics employees who have brought personal decorations, ornaments, trees, etc., into the plant must remove them on departing at the end of their regular work shift Friday (Dec. 22).

As a safety precaution, security patrols will remove all decorative items at the start of the Christmas holiday season, according to A. C. Anderson, fire chief. Excluded will be decorations erected by plant engineering.

Off-Site Employees Contribute To Kansas Community Funds

SCHILLING AFB—Four Kansas communities in which General Dynamics/Astronautics employees live while activating Atlas launch facilities for Schilling AFB felt the generosity of these employees in recent weeks.

Checks totaling $4,000 were presented to community fund drives in four localities. Of this amount, $3,500 was donated through Employees' Con-Trib-Club. The remainder was a corporate gift.

Salina, Kan., site of Schilling AFB, received $3,500 of which $3,000 was from Con-Trib-Club and $500 from Astronautics. C. R. Jackman, Astro operations manager here, and Howard Dodd, representing Con-Trib, made check presentations recently to Tom Aird, campaign chairman for the Salina Community Chest.

In nearby McPherson, Kan., Charles Bernard presented a $300 Con-Trib-Club check to Dale Miller, chairman of the United Community Chest of that city.

Lindsborg, Kan., and its Community United Fund received $100 from Con-Trib-Club with Nancy Bracewell presenting the check to Merrill Tarnstrom, general chairman; E. G. Larson, campaign chairman; and H. J. Weltmer, publisher of the Bethany Press of that city.

Another $100 went to the Abilene United Fund from Con-Trib-Club. Don Collingham of Astro made the presentation to L. E. Garrison and C. L. Brainard, drive officials.

Card Lesson Series Offered at Walker

WALKER AFB—A series of informal bridge lessons offered by the GD/Astro Wives Club here has proved so successful additional sessions are being planned for early next year, according to Mrs. William Burbeck, instructor.

A beginning class and an advanced class will be held on a rotating location basis. Those interested may contact Mrs. Marilyn Onyon at 623-3857.

Wives Gathering Shoes For Children

WALKER AFB — GD/Astro Wives Club here has been conducting a highly successful drive to provide shoes for needy Roswell school children.

On Dec. 7 some 182 pairs of shoes were turned over to one elementary school here. Plans call for continuing the program as long as shoes are needed. Mrs. C. A. Krueger is chairman of the group.

HISTORY OF JAZZ SPEAKER'S TOPIC AT CLUB SESSION

CAPE CANAVERAL — Don Williams, GD/Astro design engineer here, recently created a stir among Management Club members when he spoke on the history of jazz.

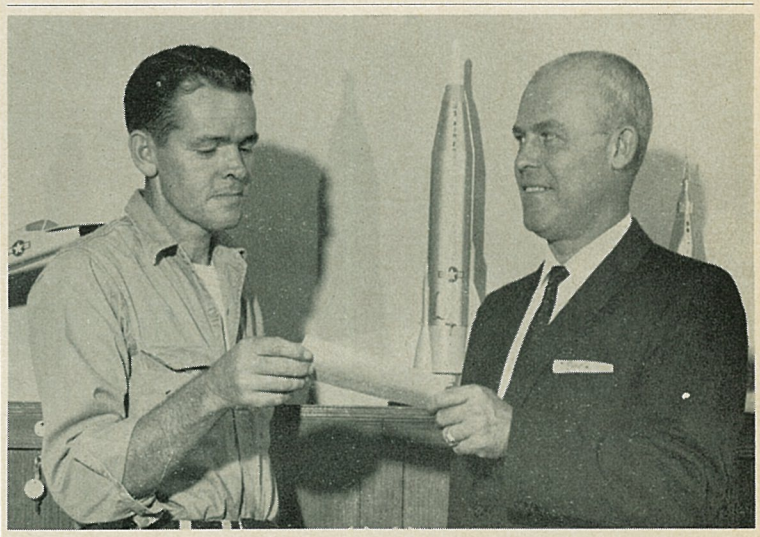
Utilizing bits of recorded music, Williams talked on old and new records, jazz and how it started and grew.

As a high school student in Greencastle, Ind., Williams played with the DePauw University Symphony Orchestra. After attending Purdue and graduating, Williams alternated his time between symphony orchestra dates and dates with modern dance bands. He has devoted a great deal of his leisure to studying jazz and copying records from many eras.

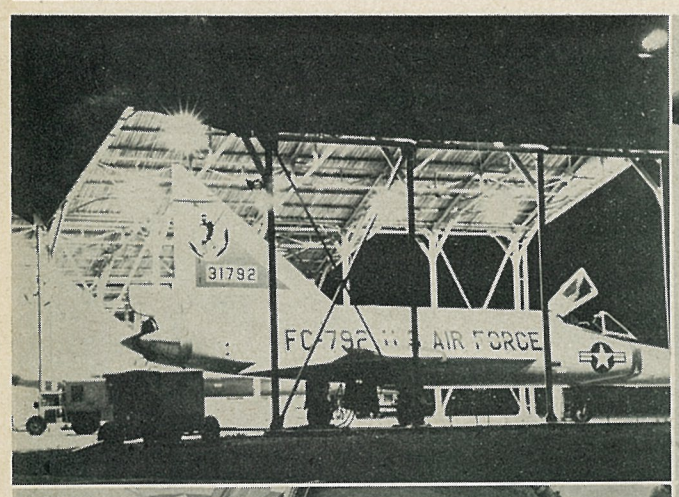
Flanagan Will Head Training Directors

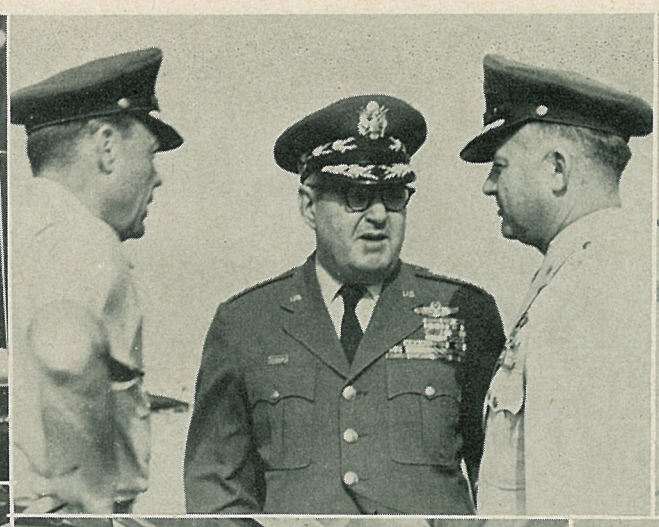
CAPE CANAVERAL — Twin honors were bestowed on Robert Flanagan, employee services and educational services representative for GD/Astro here, recently.

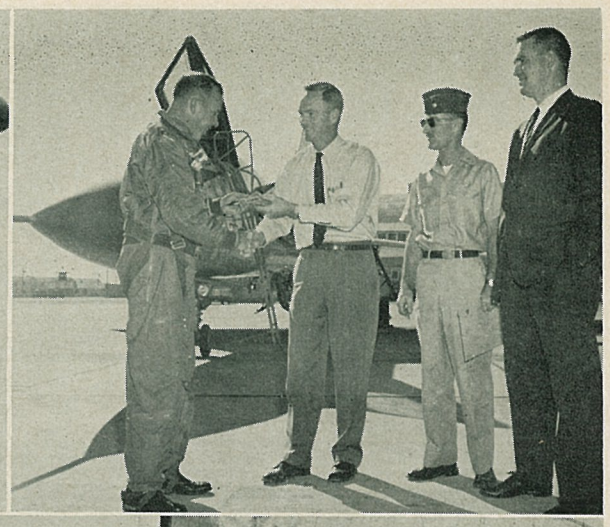
On the same day Flanagan was named president of the Canaveral Area Chapter, American Society of Training Directors, and also first vice president of GD/Astro Management Club at AFMTC.

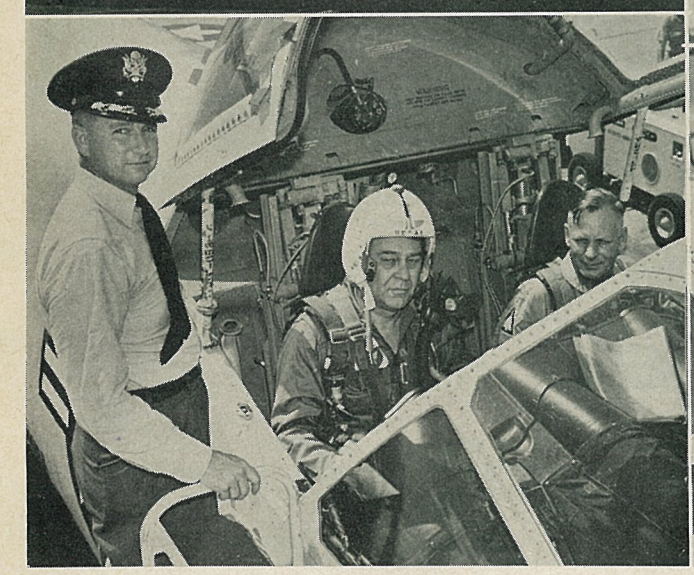


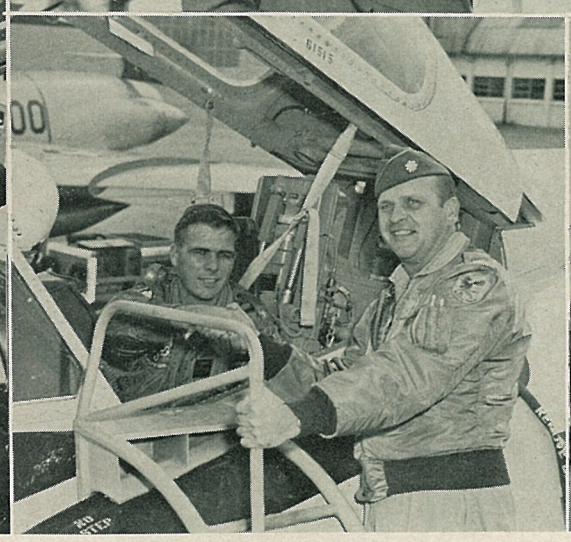
BIG, BIG GIFT—GD/Astro employees at Cape Canaveral, through action of Con-Trib-Club, recently presented $10,000 to United Appeal, largest gift yet made to this group by Con-Trib. Astro's W. H. Strange, left, presents check to C. W. Bollum, chairman of Missile Range committee for drive.













SCOUTING THE DELTAS—In center photo at top Gen. Curtis E. LeMay, USAF Chief of Staff, is congratulated by Lt. Gen. Robert M. Lee, ADC commander (left) and Col. Glenn T. Eagleston, Tyndall AFB commander, after scoring bull's-eye at William Tell interceptor weapons meet, flying in Convair TF-102. At top left is F-102 at Itazuke Air Base, Japan, shown on alert at ready pads. Top right: Brig. Gen. Henry C. Newcomer (left) commander, Los Angeles Air Defense Sector, is congratulated by Collins C. Broadwater, GD/Convair field service rep, after first solo flight in F-106 at George AFB, Calif. Others are Maj. Jack A. Rockwell of 329th FIS and R. L. Robertson of Hughes Aircraft. In lower left, Maj. Gen. J. E. Taylor, adjutant general of Texas National Guard (center), goes through TF-102 cockpit check with Lt. Col. N. O. Didear, commander of 136th Air Defense Wing, before first ride. At left is Lt. Col. R. H. Taylor, commander of 147th Fighter Group, Ellington AFB. Lower center: Maj. John M. Odiorne, director of operations, 64th FIS, Paine Field, Wash., congratulates Lt. Gerald S. Miller on flight that put him over 1,000-hour mark in F-102s. Lower right: Air National Guard readiness plaque is awarded 125th Fighter-Interceptor Group, Florida. From left: Lt. Col. Irving Wadlington, senior AF adviser; Col. Charles Riggle, Florida assistant adjutant general for air; Lt. Col. James Higgins, acting Florida Air National Guard commander; Lt. Col. John Taylor, 159th Fighter Interceptor Squadron commander.



VIP CLASS—American Airlines executives and managers line up beside Astrojet 990 on GD/Convair flight line during recent capsule briefing on Convair jetliner.

American Airlines Executives Attend 990 Familiarization

American Airlines executives were at San Diego the first of this month to get acquainted with the Convair 990.

A special two-day "capsule" familiarization was conducted by American Airlines training specialists from Tulsa, Okla. Besides an overall look at the jetliner, the 16-hour briefing concentrated on special features peculiar to the 990, said R. W. Bragg, manager of technical training services, at the GD/Convair plant to coordinate the sessions.

Included in the group attending were city managers from six cities throughout the United States which will be on the 990's schedule when it goes into service with American.



Key American Airlines men at the Dec. 7-8 briefing were W. B. Davis, vice president, maintenance planning and service engineering; N. S. Rice, director technical training and qualifications, both from Tulsa; F. J. Mullins, vice president, field activities, from New York City.

Other administrators were W. G. Conrad, vice president, Northern Group; R. F. Lambert, vice president, Southern Group; G. W. Shiles, vice president, Central Group, all headquartered at the New York City downtown office; W. H. Miller, vice president, New York Area, headquartered at LaGuardia airport; H. D. Silliman, vice president, Chicago Area, O'Hare airport.

City managers were B. J. Hugger, Cincinnati; R. K. Pfunder, St. Louis; R. Radcliffe, Dallas; J. A. Tompkins, Detroit; J. H. Woods, Boston; J. E. Gainer, Washington, D. C.

Technical training specialists doing the briefing were H. L. Patterson, K. W. Metzinger, J. P. D'Angeli.

Customer transport service personnel at GD/Convair assisted in arrangements during the group's stay.

SOCIAL SECURITY TAXES TO INCREASE FOR ALL IN 1962

General Dynamics Corporation employees everywhere will join other wage earners in paying higher Social Security taxes on wages earned during 1962.

Basically, the increase is from the 1961 rate of three per cent to the 1962 rate of three and one-eighth per cent. This applies to the first $4,800 earned during the year. At the same time, General Dynamics' contribution per employee will increase by the same amount.

For those earning over $4,800 the increase will be about $6 for the year, from the present $144 to $150 per year. Deductions for Social Security purposes appear on payroll check stubs under the heading of "F.I.C.A."

Increased taxes make possible increased benefits which went into effect last August. They include earlier retirement for men; higher benefits for widows; increased income for those eligible for minimum benefits only; and the possibility of earning more after retirement while still drawing Social Security benefits.

Deductions under the program are automatic and require no action on the part of employees.

They Love it!

Smith Family Spans Country Responding to Astro Duties

PLATTSBURGH AFB — Probably one of GD/Astronautics' "most traveled" employees, and first to be assigned to Astro's operations here, is Robert C. Smith, complex supervisor.

His work with GD/Astro has kept the Smith family on the move almost constantly — and they love it.

Smith first joined GD/Convair in 1954, and after working on F-102 projects in San Diego, went to Moffett Field, near San Francisco, for wind tunnel tests on the F-106. In 1957, transfer to Astronautics' Atlas project sent the family to Cape Canaveral where he took part in the first launch of the ICBM.

His Florida experience made him a likely prospect for a move to Vandenberg (then Cook) AFB as the 12th Astro man assigned there. Here he scored another first by participating in the first operational Atlas launch in 1959.

The following year he led Astro work force assigned to Plattsburgh AFB, New York, and scored two other "firsts." Daughter Jennifer Mary was the first child born to an Astro employee here, and Smith was the first launch complex supervisor to be appointed.

The Smith family now consists of his wife, Arline, and—besides Jennifer — daughters Loreen, 15, and Theresa, 11, and son Robert, 8. By coincidence all children are native-born New Yorkers.

"Travel is no hardship," Smith claims. "The youngsters have received an educational opportunity seldom available to those unable to move about the country, and each move has brought new challenges in my work."

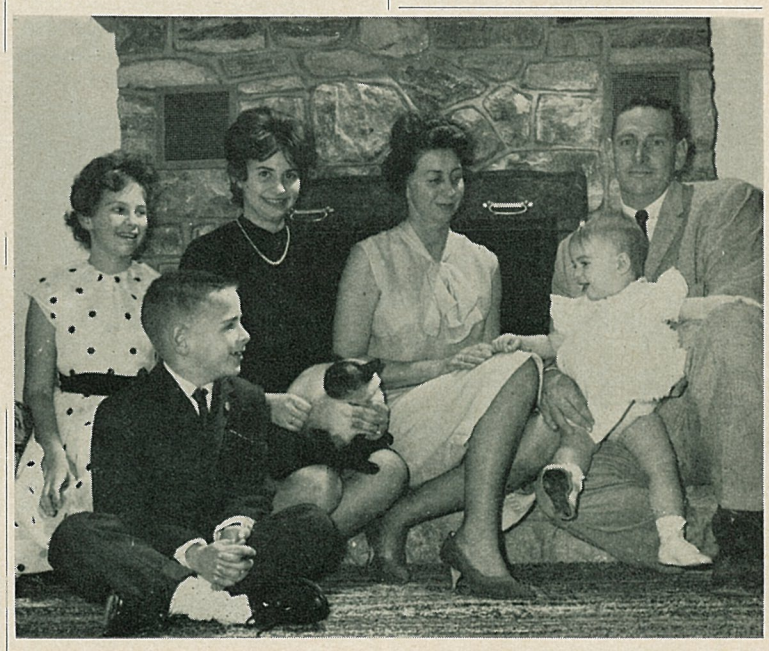
Travel has become a hard-to-break habit for the Smiths. They started their "moving business" even before Smith joined General Dynamics.

He previously spent 12 years in the Marine Corps—on the move.

Harry Lyter, Former Convair Chief, Dies

Harry C. Lyter, 61, former chief of GD/Convair's fire department, died late last month in Tucson, Ariz. He had been ill for some time.

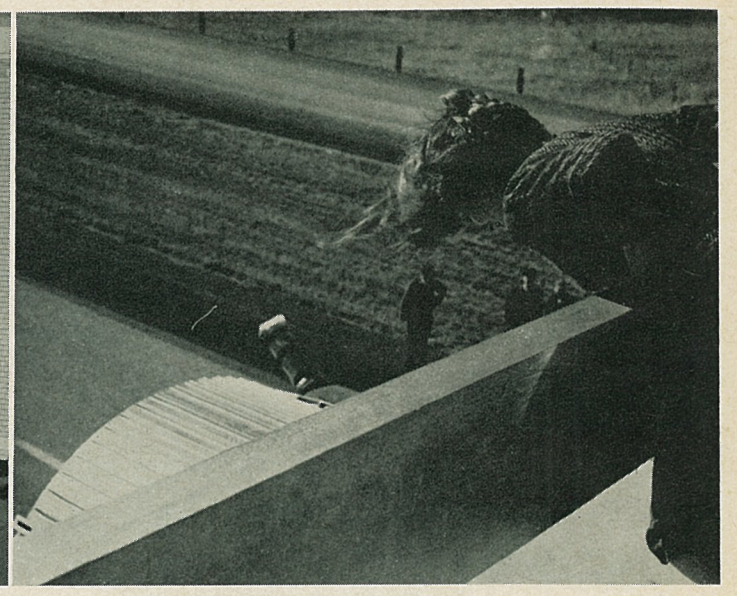
He headed the department for 16 years, prior to his retirement in 1959.



TRAVELING SMITHS—Shown at home in Plattsburgh, N.Y., are Theresa, Robert, Loreen, Mrs. Smith, Jennifer, and Robert C. Smith. Stone fireplace in background was built of rock excavated at 142-foot level from Plattsburgh AFB Atlas launch site.







OFF-SITE SIDELIGHTS—In center, Air Force Secretary Eugene Zuckert receives model of Atlas missile from Cal Fowler, GD/Astro assistant operations manager assigned to Warren AFB. At left, Astro "natives" Bob Verdon and Alice Watters at Warren entertain San Diego visitors John Morgan, Tom Jarrett, Charles Guy, Stan Flanell, Ernie Clay, Len Sabatka. In photo at right Astro's Carol Craw at Warren watches Atlas missile vanish beneath overpass.

Scale Miniatures

Passenger-Less Railway Trains Make Regular San Diego Runs

Although it has more "rolling stock" than any other line in the area, one San Diego railway system has never carried a passenger!

This is the elaborate "layout" operated by San Diego Model Railroad Club, to which GD/Astronautics and GD/Convair employees and adult members of their families may belong.

Subsidies from both ARA and CRA greatly reduce the cost of membership in the club, whose elaborate facilities — including over 1,750 feet of "main line" track — are located in Balboa Park's House of Charm at San Diego.

ARA and CRA members may join for only $10 in membership fees, and monthly dues of $2. Normally the initiation fee is $25.

About half the club's membership consists of GD/Astro or GD/Convair employees who take advantage of the lower rates to enjoy their hobby.

"These trains are not toys," Bill Worthington of Astro, past president, emphasized. "They are as near to scale miniatures as it is possible to make them."

The club layout includes HO and O-gauge systems, an HOn3 (narrow gauge) line, and a trolley line. Total length of combined track (including sidings, etc.) is estimated at over 7,000 feet.

"The hobby can be as expensive or inexpensive as the enthusiast cares to make it," Worthington explained. "Most people start with a ready-made train costing as little as $10. From there, many like to build their own models, either from kits with varying degrees of complexity, or from 'scratch.'"

Members normally provide their own "rolling stock," and operate it on the club layout.

Club meetings are held every Friday evening in the House of Charm. First meeting of the month is devoted to HO-gauge operation; the second is a business session; the third is for O-gauge operation; and the fourth is a work night.

Club rooms are open for public visits Friday evenings, and on Sundays from 1 to 4:30 p.m.

"Because the trains and layout are quite valuable, we limit children's participation to sons (or daughters) of regular club members," Worthington said. "Club regulations set a minimum age of 21 for regular members."

Employees interested in modeling, railroads, or railroading—the subject often appeals strongly to students of recent history—have been urged to visit the Balboa Park layout, or contact club members for additional information.

MULTI-WEAPON B-58 SHAKEDOWN

Shakedown flight for B-58 No. 42, recently converted to a multiple-weapon carrier, was to be made "sometime after mid-December."

The production Hustler will be used in a series of flights to test out airplane performance with its added underwing bomb load.

Ground vibration tests were carried out on No. 42 last month. A series of hook load tests was to follow.

Following initial flights out of Fort Worth, No. 42 and crew will move on to headquarters at Kirtland AFB, N. M. Most bomb drops are scheduled for White Sands Missile Range.

Preliminary testing of the new multiple-weapon configuration was carried out earlier this year on No. 59.

500 Sons, Daughters Attend Xmas Party

WALKER AFB — More than 500 sons and daughters of GD/Astronautics employees here were on hand Dec. 10 for a children's Christmas party staged under joint sponsorship of ARA and the Astro Wives.

Held at the Roswell Community Center, the party included games and treats for children.



CLEAR TRACKS—Don Taylor and ARA Commissioner Dave Fyffe are shown at one of several control stations on San Diego Model Railroad Club's layout in Balboa Park. ARA club has full use of park facilities, holds regular meetings there.



HI THERE, SANTA!—Look what came down chimney at GD/Fort Worth Recreation Clubhouse with sleigh and gifts—a cute little "Santa Claus" named Donna Price, clerk in Dept. 24-7.

Bunker Hill Has 22 B-58s

Bunker Hill AFB counted 22 combat-ready B-58s on hand following delivery of production Hustlers 80, 86 and 87 in early December.

Deliveries to the SAC base in Indiana continued well on schedule, with Nos. 82 and 84 tentatively slated for delivery in December also.

Crewmen from 305th making acceptance flights were:

No. 80—Col. H. B. Robertson, pilot; Maj. G. G. Schutt, navigator-bombardier; and 1st Lt. J. J. Cappel, DSO.

No. 86—Maj. H. E. Flook, pilot; Capt. L. Broome, navigator-bombardier; and 1st Lt. C. R. Leonard, DSO.

No. 87—Maj. D. J. Younger, pilot; Capt. L. R. Friedman, navigator-bombardier; and Capt. R. E. Ost, DSO.

Rumbaugh Assigned To Centaur Position

W. H. Rumbaugh, veteran GD/Convair executive, has joined Astronautics as senior Centaur program administrator-operations, according to E. D. Bryant, vice president-operations.

Rumbaugh replaces J. L. Milliorn who has taken a new assignment with program planning and control.

Except for a two-year Navy hitch, Rumbaugh has worked for Convair since 1940, principally in field operations work both at San Diego and Palmdale during F-102/106 development.

With Needy

Sharing During Holiday Season Traditional with GD/Astro Folk

From Cape Canaveral to Plattsburgh, San Diego to Spokane, and many points between, General Dynamics/Astronautics folk this week are helping to brighten the lives of the less fortunate.

Traditional at Astro is the practice of sharing with the needy at Christmas. This week the practice reaches a climax.

Just how far this help extends, how many families are aided and in exactly how many different locales is not known. However, at every point where Astro people work, plans are being pushed to help others. This may involve a small group, a department or a whole installation, or an individual.

In San Diego last Saturday, 150 of the area's most needy children were feted in a party at the main plant cafeteria. They played games, ate lunch and enjoyed entertainment. When they went home each carried a number of gifts and toys as well as clothing. Administering this program were several hundred volunteers. Con-Trib-Club furnished the money, Salvation Army the names of the needy. Many other groups helped.

Tomorrow (Dec. 21) a team of Astro Divers will take to the Bldg. 2 reflection pool following the first shift to collect coins tossed there by employees. These coins, plus others placed in Christmas candles, will be used to provide for needy families.

San Diego area groups within Astro have "adopted" more than 40 needy families, exhausting the names supplied by Emergency Aid. These families will receive gifts, food, clothing and sometimes money to meet their most pressing needs. Other groups are giving to funds, orphanages and welfare agencies.

Regardless of the gift or where it is given, Astro folk feel that sharing is a wonderful way to enjoy a Merry Christmas.

Dow Named Counsel For GD/Astronautics

Appointment of H. Cushman Dow as chief counsel for General Dynamics/Astronautics was announced last week by J. R. Dempsey, president.



H. C. Dow

Dow is a Yale University alumnus and a 1948 graduate of Harvard Law School. Before joining GD/Astro, he served as chief counsel for Pacific Telephone's northern counties area, headquartered at Sacramento.

A native of Boston, Mass., he spent five years with the San Francisco law firm of Pillsbury, Madison and Sutro, and later served as general attorney for Western Pacific Railroad.

During World War II, Dow served as a Navy gunnery officer aboard cruisers in the South Pacific, attaining the rank of lieutenant commander.

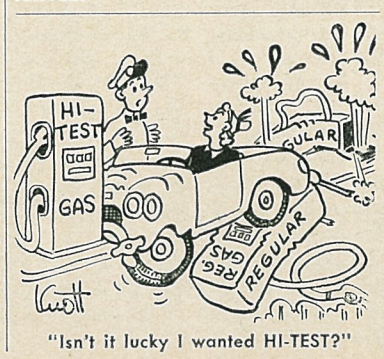
He will report directly to Dempsey.

Astro Daughter Wins Tap Dancing Laurels

Proud GD/Astronautics parents are Donald G. (Dept. 143-3) and Eleanor (Dept. 141-1) Clark, whose daughter, Brenda Lee, 7, is attracting local attention with her tap-dancing routine.

Brenda Lee appeared in a local dance studio's recital, "Holiday on Stage," after only one year's instruction. Following the performance, she received an invitation to appear in a Naval Training Center Christmas program.

She portrays "Miss Poinsettia" in a white satin costume designed and made by her mother. It is decorated with red sequined poinsettias and green sequined holly leaves.



"Isn't it lucky I wanted HI-TEST?"

Robertson Assigned To Heller Survey

Three temporary executive assignments were announced at General Dynamics/Astronautics this month by J. R. Dempsey, president.

George M. Robertson, director of management systems, is on special assignment to work with Robert Heller and Associates, management consultants, on recommendations for improving Astro operating methods. Meanwhile, Paul D. Ferrara, chief engineer-administration, becomes acting director of management systems, and George E. Putness, formerly GD/Convair assistant chief engineer-administration, becomes acting chief engineer-administration.

Stamp Club Members Sought at GD/Astro

Plans for formation of an ARA-sponsored Stamp Club if sufficient employee interest is expressed have been announced at General Dynamics/Astronautics.

The proposed organization will operate similarly to other ARA activities, with regular meetings for philatelists who will hold auctions, conduct stamp trading, hear guest speakers, etc. An organizational session is tentatively scheduled for next month.

GD/Astro employees interested in formation of a Stamp Club have been asked to contact Haydon "Rocky" LaNois, Dept. 535-5, ext. 2991.

Teen-Age Business Enterprise 'Cleans Up' on Xmas Corsages

"Industrialites," teen-age business group sponsored by GD/Convair Management Club, is deep in production for holiday contracts.

The 19 high school boys and girls in the Junior Achievement group have already completed several hundred corsages for company Christmas affairs. They supplied 425 for the annual Management Club dance last weekend and 175 for the Rose Canyon holiday party.

They will move on into production of other products after the first of the year, said J. A. Gliebe, JA board of control chairman for the Management Club.

They will be turning out shoe covers of the type used in the company to protect wing surfaces on the assembly line. Later, they will make animal pincushions for general sale.

Directing the group are W. T. Toon, committee chairman; H. G. Barnes, A. J. Krumweide, and John Woodhead, advisers.

The GD/Convair Management Club also is underwriting overhaul cost of power equipment used by JA groups at the San Diego headquarters.

"Several of the machines, such as band saw, jig saw, drill presses, have been down due to lack of small, inexpensive parts," explained Gliebe. "The Management Club is paying for the parts and Harold Washington, GD/Convair retiree, is volunteering his time for installation."

'Drive Dry!' Chief Safety Engineer Urges Drivers at Holiday Time

"Holidays are danger days," warns M. C. Val Dez, General Dynamics/Convair chief safety engineer, as thousands of General Dynamics people prepare for holiday trips over the next two long weekends.

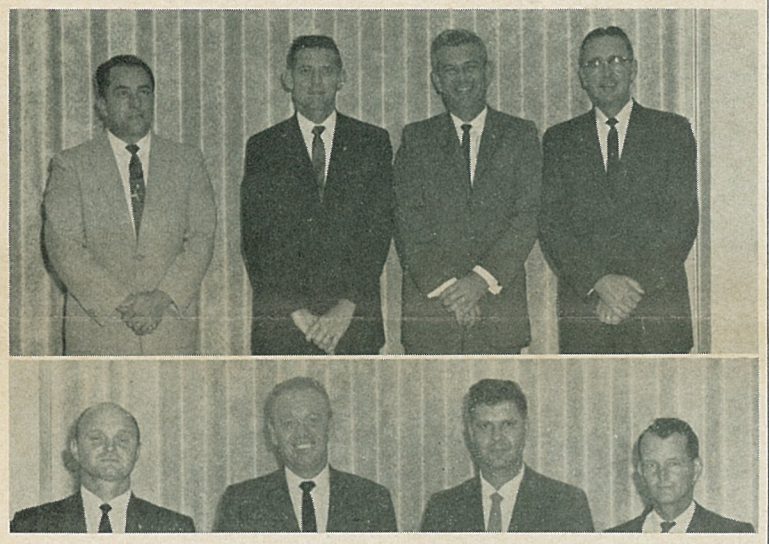
"December is always one of the deadliest traffic months of the year," he said. "Above all, drive dry—over half of Christmas traffic deaths involve drinking drivers.

"Drive safely—yield the right of way, keep at safe distances, travel at safe speeds, and signal properly.

"As an extra safeguard, use safety belts."

Safety belts are still on sale at both Plant 1 and Plant 2 safety cribs at $6.25 per set.

Plant 1 safety crib is open 7 a.m. to 6:30 p.m.; Plant 2, 9 a.m.-5.30 p.m. Both are closed during 12-12:30 p.m. lunch hour.



AFMTC CLUBMEN—In upper photo are new officers of GD/Astro Management Club at Cape Canaveral. From left, they are Ken McCarthy, 2nd vice president; John Riels, secretary; John Hughes, president; and Robert Flanagan, 1st vice president. Below are new members of board of directors, R. D. Beasley, L. I. Fraunfelder, D. M. Maximovich, W. H. Baker.

AF Officer in Training at GD/Convair Receives Outstanding Service Citation

Capt. David L. Keller, now assigned to General Dynamics/Convair under the Air Force Education-with-Industry program, was awarded the AF Commendation Medal last month.

Presentation was made Nov. 17 by Lt. Col. C. W. Atterholt, chief of San Diego Air Procurement District, former AF plant representative at GD/Convair.

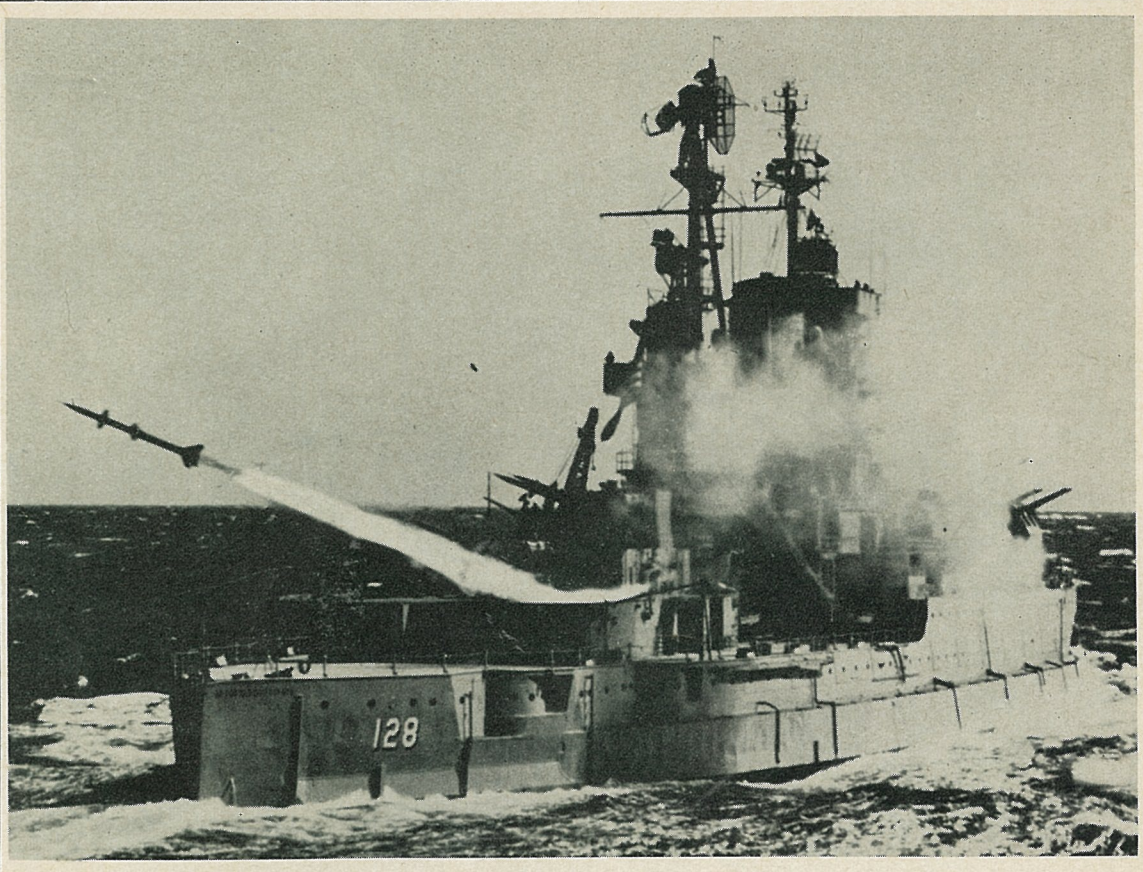
Captain Keller was cited for meritorious service while serving as OIC of the Tanker Maintenance Branch and Supervisor of Maintenance of the Organizational Maintenance Squadron, and Job Control Officer of 11th Bombardment Wing, Altus AFB, Okla. He was stationed there from September, 1958, to June of this year.

The citation read, "Captain Keller demonstrated an outstanding ability in planning, scheduling and controlling aircraft maintenance functions and all related activities. The keen foresight, devotion to duty and aggressive action displayed by Captain Keller reflect great credit upon himself and the United States Air Force."

Capt. Keller and Capt. Dewey K. K. Lowe reported at GD/Convair plant in September of this year for the 12-month AF training program. The program, concentrated on industrial planning and procurement operations on an executive level, is coordinated by educational services.



CITED—Capt. David L. Keller (center), AF officer in training at GD/Convair, receives AF award from Lt. Col. C. W. Atterholt. At left is R. H. Nall of GD/Convair educational services.



EARLY PHOTO—Released in 1955, this was among first photos shown publicly of Terrier missile. It is taking off from deck of converted battleship USS Mississippi.

Commercial Submarines Held Feasible

NEW YORK, N.Y. — Commercial submarines and underwater tankers today "are technically quite feasible" and at higher speeds will be more efficient than surface vessels, according to a top nuclear submarine research engineer.

Dr. H. E. Sheets, chief research and development engineer of General Dynamics Corporation's Electric Boat Division, told the American Society of Mechanical Engineers annual meeting here that underwater vehicles are needed for transport and to explore and exploit the full potential of the oceans.

"The greatest commercial incentive for submarines at this time would appear to be their use on special routes where surface ships cannot be used, such as under the Arctic, resulting in considerable savings," Dr. Sheets said.

"In other cases, high-speed requirements may prove the submarine the most economical transport. Submarines may also be required for access to undersea resources."

Dr. Sheets indicated that marine cargo in the future might be carried in several different ways. For certain medium values of the speed-to-displacement ratios, he said, the submarine is the most economic means of sea transport. The surface ship would remain more economic for handling bulk loads.

Electric Boat Orders Big Dock

A graving dock, capable of drydocking the Navy's largest nuclear submarines, will be built at General Dynamics / Electric Boat, Groton, Conn.

Plans call for the new facility to extend 512 feet into the Thames River, angling out in a southwesterly direction from the Groton shore. The dock itself will be 70 feet wide with a 35-foot draft at mean low tide.

With a capability of 12,000 tons, it will be capable of handling any existing nuclear submarine. Electric Boat is currently building seven ships of a new class of Polaris-firing nuclear submarine, which, with a 7,000-ton displacement, will be the heaviest undersea craft built.

The dock will be flooded by opening a gate at the west end and drained by two 30,000 gallons-per-minute pumps.

Construction is expected to take a year.

Terrier 'Won Spurs' in '53 By Knocking Down Drone

(Following is No. 74 installment in continuing history of General Dynamics products. It deals with early development of Terrier missile, currently primary air defense for 26 Navy warships.)

Design of the prototype Terrier was finished early in 1949 at San Diego where Vultee Field projects had been transferred in 1947.

Additional requirements were cranked into a series of five small production lots over the next four years while an extensive program of flight testing was carried out.

Starting in 1950, simulated shipboard equipment at NOTS—Inyokern was used. Other flight testing was conducted aboard the laboratory ship USS Norton Sound after September, 1951, and by Operation Development Force in the Atlantic, 1952-53.

Terrier came of age Aug. 12, 1953, when the test ship, USS Mississippi, launched a full-configuration missile equipped only with smoke-puff warhead and knocked down a high-flying F6F drone.

Preparations to make the missile operational had been foreseen earlier by the Navy when personnel were assigned to engineering at San Diego in 1950.

Formal courses in theory and operations were started in 1951 with first graduates organized into Guided Missile Unit 21 (assigned to Mississippi) and GMU 23 (Norton Sound). The Navy missile school at Pomona was activated early in 1953 to offer a 24-week course.

Concurrently, two heavy cruisers, the USS Boston (CAG-1) and USS Canberra (CAG-2), were converted in late 1955 and early 1956 as the Navy's first Terrier launchers.

Both cruisers had the aft 8-inch turrets removed, twin launchers installed, added below-decks storage, servicing and loading equipment, and special search and guidance systems as part of the conversions.

Terrier I (XSAM N-7) was a needle-nosed missile 11.4 ft. long and 10 inches in diameter, powered with a solid propellant rocket motor using a beam riding guidance system. Main control surfaces were 12-inch cruciform "wings" near the midpoint of the missile body. In launching, the Terrier was mounted atop a solid-propellant booster rocket section that fell away in flight.

Airline Groups In Jet Training

Three foreign airline groups are going through flight training for Convair jet transports given by production flight at the San Diego plant of General Dynamics/Convair.

Twenty-three REAL / Varig crewmen arrived from Brazil to begin a 5-week course last week. Of the group ten are flight captains; ten, flight engineers, and three, ground school instructors. They are now in ground school classwork and becoming familiar with the Convair 990 in the cockpit procedures trainer.

Four Viasa pilots from Caracas, Venezuela, are completing their flight training this week, as is one representative from Cathay Pacific Airways Limited of Hong Kong. Cathay Pacific's delegate, N. J. Marsh, assistant supervisor of operations, audited the entire course preparatory to setting up flight training for flight crews from the Hong Kong airline early in January.

NEWS Issue of Jan. 3 Will Reduce in Size

Due to year-end holidays which cut into production time, the next issue of General Dynamics NEWS (Jan. 3) will have fewer pages than usual and a single edition will be published. No recreation news can be carried.

The regular eight-page, multi-edition paper will resume with the Jan. 17 issue.

F-102 Squadron Safety Leader

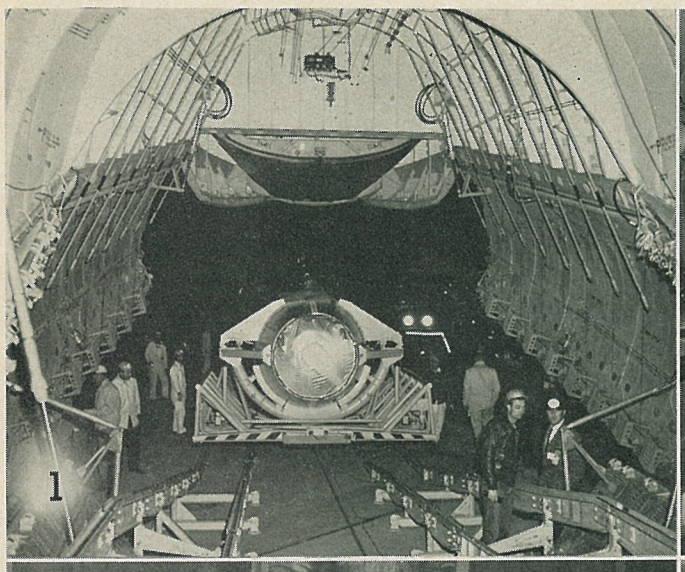
An F-102-equipped fighter squadron has won the PACAF Tactical Unit Flying Safety Award for keeping its planes in the air an entire year without an accident.

The 509th FIS, based at Clark Air Base, Philippines, flew over 7,000 hours in F-102s for a twelve-month period ending September, 1961, to win the flight safety award.

In presenting the plaque, Maj. Gen. Chester W. Cecil, Deputy Chief of Staff for Administration and Logistics at PACAF Headquarters, said: "This award reflects not only an outstanding record in flight safety, but also indicates sound maintenance support and operational ability."

Lt. Col. Russell D. DeMont, 509th commander, praised the entire squadron for its performance, "My heartfelt thanks goes to every man who works on the F-102 at Clark."

GD/Convair field service representative with the F-102 squadron is W. C. Butterfield.













ON TOUR—Astro off-site bases are surveyed by wandering General Dynamics cameramen. (1) Atlas seen from interior of Air Force C-133 in which missile was transported from San Diego to Altus AFB. (2) and (3) On hand to watch arrival at Altus AFB are Col. K. E. Steele, 11th Bomb Wing Commander; J. N. McPheeters, Astro operations manager; and Col. L. C. Brooks, commander, 577th SMS, who is presented with packages which accompanied missile, by Maj. R. M. Johnson, aircraft commander. At rear is Capt. Edward Graeter, co-pilot. (4) Walker AFB Wives Club bridge beginners, Mrs. Frank Brown, Mrs. E. L. Patton, Mrs. W. E. Burbeck, instructor, Mrs. C. E. Hassler and Mrs. Donald Abrams. (5) Jack Moline, Cape Canaveral test conductor, receives special award for 25th Atlas launch from K. E. Newton, chief of test operations. (6) Walker AFB Wives Club recently presented $50 and copies of "Dynamic America" and "Atlas, Story of a Missile" to Roswell public library. Seated, Mrs. F. L. Henrietta, club president, and librarian Betty Shouse, while Mrs. R. B. Katan and Mrs. George Fetter stand behind.

'Welcome Mat' Turned Out For First Atlas On Arrival by Air at Oklahoma's Altus

ALTUS AFB—Enthusiasm here ran high late last month with the arrival of the first Atlas ICBM destined for Altus launch complexes.

A distinguished group of GD/Astro and Air Force personnel were on hand to "greet" the missile, and to witness its unloading from the Air Force C-133 which transported it from San Diego.

Included were J. N. McPheeters, GD/Astro operations manager here; Col. K. S. Steele, 11th Bomb Wing commander; and Col. L. C. Brooks, commander, 577th Strategic Missile Squadron.

A training program for 577th personnel has been under way since the group's organization last June, with much of the training conducted at Sheppard AFB, Tex. Present instruction includes "over-the-shoulder" training in which Air Force missilemen observe installation and checkout operations conducted by Astro technicians.

Lt. Col. Robert E. Jarrell is deputy commander of the 577th.

'Coffee Kitty' Cash Will Go For Needy

SCHILLING AFB—A "coffee kitty" among GD/Astronautics employees at launch complex No. 5 will supply the means by which two families in the Lyons, Kan., area will receive a bountiful Christmas.

For some time now Astro employees at the site have been diverting money cleared in the coffee fund into a special treasury. When Christmas rolls around they plan to use the money in "adopting" two needy families.

Plans call for Lyons needy families to get gifts, clothing, food.

GD/Astro Youngsters at Vandenberg Share With Less Fortunate Children in Korea

VANDENBERG AFB—GD/Astronautics youngsters here are taking part this year in a unique project of international good will by sharing with needy children in another land.

Last month an employee committee headed by Ross Workman arranged for Astro youngsters to give of their earnings and allowances to bring the holiday spirit to children in a South Korean orphanage.

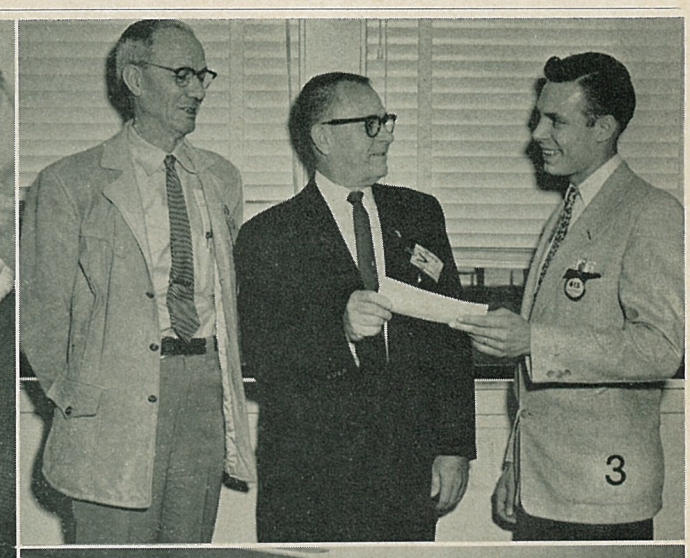
Response was generous, and funds were sent last week through CARE, Inc.

CARE will advise the Astro group of the orphanage name and address and a scrapbook with signatures and names of children contributing, and photos of the Vandenberg area will be sent to Korea later.

Astro committee members included F. C. Shorten, I. D. Souders, Ruth Traxler, Herb Griffin, George Holanik, E. L. Genest, W. A. Reinman, Fausto Navarro, T. Westbrook, C. F. Cain and Keith Hudson.

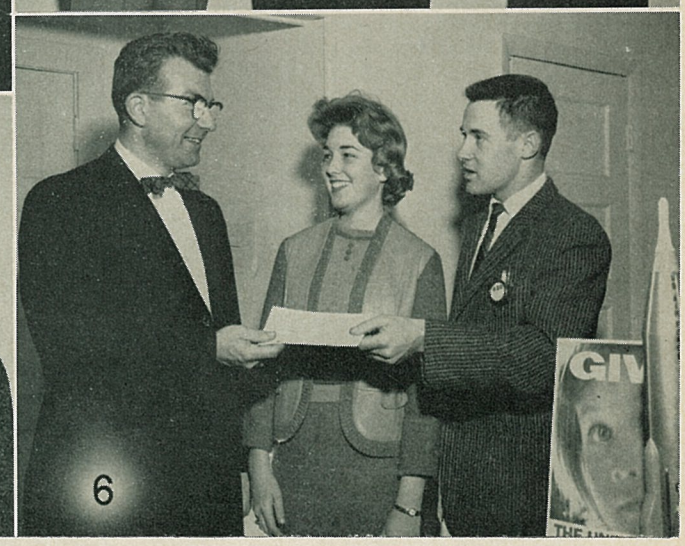








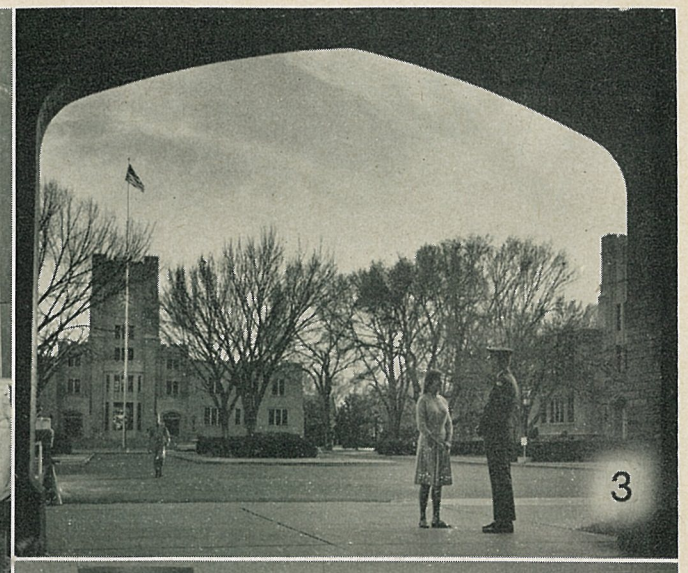




CON-TRIB PANORAMA—Far-reaching effects of Con-Trib-Club's community giving efforts are represented here in picture form. (1) C. R. Jackman, base manager at Schilling AFB, presents $500 check from GD/Astro to Salina, Kansas, Community Chest Campaign Chairman Tom Aird while Con-Trib representative Howard Dodd extends check of $3,000. (2) Four-year-old Danny, son of Astro's Joseph Caillouet at Vandenberg AFB, was chosen to present Con-Trib-Club check of $13,160 to Ross Taylor, United Community Services representative. (3) Abilene United Fund officials L. E. Garrison and C. L. Brainard in Kansas accept $100 Con-Trib donation from Astro's Don Collingham at Schilling AFB. (4) Another Kansas community, Lindsborg, joined those aided by GD/Astro off-site base at Schilling AFB when Nancy Bracewell presented $100 check to Merrill Tarnstrom, E. G. Larson and H. J. Weltmer, United Fund representatives. (5) Charles Bernard, also of Astro's Schilling AFB operations, turn over $300 check to Dale Miller of United Fund at McPherson. (6) Plattsburgh Community Chest received $1,350 from GD/Astro employees boosting Chest fund to 97 per cent of its goal. John Blanchard, right, and Susan Smith give check to Warren Chase, Community Chest president. Astro's Con-Trib-Club committee at main plant passes on off-site recommendations.

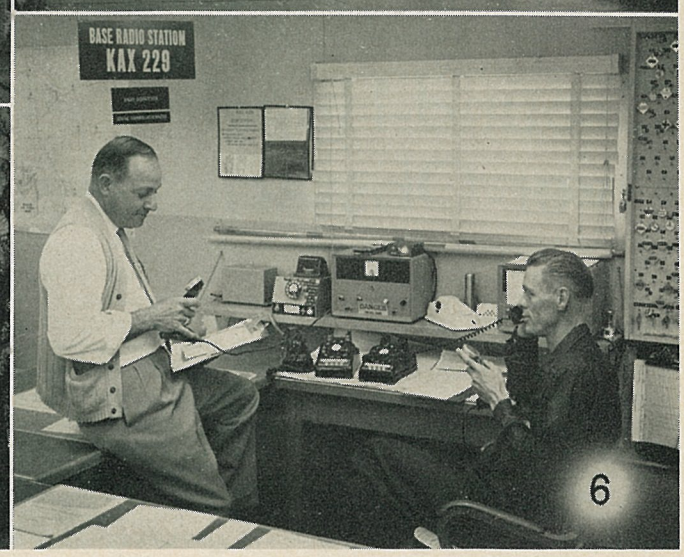












WALKER HIGHLIGHTS—Photos offer cross-section of life at and around Walker AFB, New Mexico. (1) Adelaide Tucker, Nancy Campbell and Mary Gates relax at mountain lodge 75 miles from Roswell, favorite gathering point for Astro skiers. (2) Pictured on spiral stairway deep in Atlas silo are M. R. "Rex" Ubben, Astro manager at Walker, and his staff. Front row, from left, Ubben, W. D. Baker, R. P. G. Bricker; second row, C. G. Evans, C. A. Krueger, E. H. Southard; top row, F. J. Gaffney, G. E. Henry, W. D. Campbell, E. E. Chavez, C. M. Bramley. (3) Betty Bartlett, daughter of R. C. Bartlett, Astro chief of material, meets date, Cadet Bob Hawkins, on campus of New Mexico Military Institute. (4) Astro's Steve McMillan and sons Steve, 5½, and Mike, 3½, visit Goddard Rocket Exhibition at Roswell. (5) Second largest city in New Mexico, Roswell has 40,000 population. This is Main Street. (6) At Astro communications center at Walker are Howard Rang and H. H. Cruse. Both radio and phones link facilities. Twenty-five buildings house Astro workers. Base will receive "F" series Atlas.—Photos by Craig Fishel.



PLAYGROUND—Astro girls Mary Gates, Adelaide Tucker and Nancy Campbell are shown at Ruidoso, N.M., on recent visit to snow. Called "Playground of Southwest," mountain area offers wide selection of sports.

Veterans of Astro Base Activation Transferred to Tasks at Walker

WALKER AFB — One of the "most experienced" base activation forces yet assembled is taking shape at this future Atlas operational base near Roswell, N. M.

Included are General Dynamics/Astronautics employees as well as others working for associate and subcontractors involved in the Atlas program. Many key jobs are filled by men who have worked previously at Atlas test, operational and training bases.

Typical is the staff of M. R. "Rex" Ubben, GD/Astro operations manager here. Six of the nine members came from other Astro off-site bases, while two joined Astro following military careers. Ubben came after successfully completing Atlas facilities at Forbes AFB where he was also operations manager.

"Experience gained elsewhere will be utilized extensively here on all levels," Ubben said.

This base is one of six Air Force installations slated to receive "silo" launch complexes and the "F" series Atlas weapons system.

Ceremonies Oct. 31 marked completion of construction at the first launch complex. Guests and newsmen, including Gov. E. L. Mechem of New Mexico, participated. Since that time subsequent launch complexes have passed from construction phases to installation and checkout of launch and service equipment in which Astro employees play a key role.

Astro's on-site work force here is now nearing the 700-person mark and will continue to build through the winter and spring months.

Located in southeastern New Mexico, Roswell is the state's second largest city with a population of about 40,000. It is a center of cattle and sheep ranching, cotton farming and producing oil and gas wells.

Roswell is a self-sustaining community, complete with every type of service. In a remote, semi-arid area, it is some 80 miles from the nearest town of size (Carlsbad to the south, Clovis to the north). Most employees live in Roswell and drive to launch complexes from 18 to 43 miles out of town.

Astro facilities on the base are in many areas. No less than 25 separate buildings house Atlas program workers!

Transportation is a must, with two radio-dispatched taxis on the base and eight linking launch complexes. Astro's transportation dispatch center operates a unique radio station through which point-to-point telephone contact to the launch complexes is maintained as well as two-way radio with 42 radio-equipped vehicles of a fleet of 169 trucks and cars.

Centralization helps, however, in that recreational activities here under ARA sponsorship are very active. An ARA Employees' Council operates 11 activities with 200 in bowling leagues and 60 in a ski club.

Nearby Ruidoso in the mountains draws winter and summer recreation crowds. Lakes near town and the Pecos River attract fishermen, and hunting is good.

El Paso and Mexico are 200 miles to the south and Albuquerque about the same distance to the north.

Astro employees have been welcomed to all base and community programs and have begun to take an active part in many activities.

Filling key jobs here are: W. D. Baker, assistant to the operations manager; W. D. Campbell, chief of scheduling and analysis; E. H. Southard, chief of operations; C. A. Krueger, chief of material services; E. E. Chavez, chief of quality control; C. M. Bramley, chief of industrial relations; C. G. Evans, chief of administrative services; F. J. Gaffney, chief of activation engineering; R. P. G. Bricker, communication administrator; and G. E. Henry, contract administrator.

Col. R. L. Barrowclough heads the local SATAF office.

Rocket Pioneering Conducted Near Roswell by Dr. Goddard

ROSWELL, N. M. — Not far from the site of an Atlas missile launch complex, under construction north of this community, some of the most important steps in early rocket development were taken by Dr. Robert H. Goddard.

Dr. Goddard, a reserved, persistent physicist, worked for over 45 years developing and experimenting with rockets. Most of this time he worked in obscurity.

Today, many GD/Astro employees assigned to activate Atlas facilities at nearby Walker AFB are learning of his efforts through the Robert Hutchins Goddard Rocket Exhibition in the Roswell Museum and Art Center here.

This exhibition includes rockets and parts of rockets developed and tested by Goddard as well as pictures and drawings. The Guggenheim Foundation built the wing. Outside are a launch tower and an observation tower used by Dr. Goddard.

Because his Massachusetts neighbors objected to rocket tests, Dr. Goddard moved here in 1930 and conducted tests until 1942 when he again moved east to conduct tests for the U. S. Navy.

Among developments attributed to Dr. Goddard were proof that a rocket will function in a vacuum; use of gyroscopes to control direction of a rocket's flight; first to fire a rocket faster than the speed of sound; first to launch a liquid-propellant rocket; first to patent the idea of a step rocket (stages); and first to develop the mathematical theory of rocket action. His work led to development of the "Bazooka" and did much to further JATO (jet assisted takeoff).

SKATING PARTY SLATED AT DYESS

DYESS AFB — Astro Wives' Club here will sponsor a Christmas skating party for children. All Astro youngsters are invited to attend the event which will be held at Plaza Skate Bowl from 5:30 to 7:30 p.m., tomorrow (Dec. 21).

Dozen Activities Occupy Leisure Hours Of Astro Personnel Assigned to Walker

WALKER AFB—Paul L. Cook, president, heads an active ARA Employees' Council here which is currently directing about a dozen activities for GD/Astro employees here.

Other officers are Jack Evetts, vice president, and Sara Kincheloe, secretary-treasurer. Mary Gates serves as employee services representative and Bradley J. Johnson as a representative-at-large.

O. G. Leonard is golf commissioner of an activity that holds monthly tournaments in season. A representative softball team has John Shortridge as commissioner, while Don Richardson is commissioner of a representative basketball team.

Some 200 keglers participate in a huge league rolling three nights each week under direction of Commissioner Pat Ancel. In addition, two Wives Club leagues roll during the day.

Twenty participate in square dancing headed by M. W. Vittitow and another 10 belong to a Go Kart club headed by Roy Sullivan. C. B. Chalmers heads a sports car group and G. E. Smith a gun club.

A ski club with 60 members led by Ray O'Malley and a flying and soaring (aero) club with 85 members and K. W. Oakes as commissioner are very active.

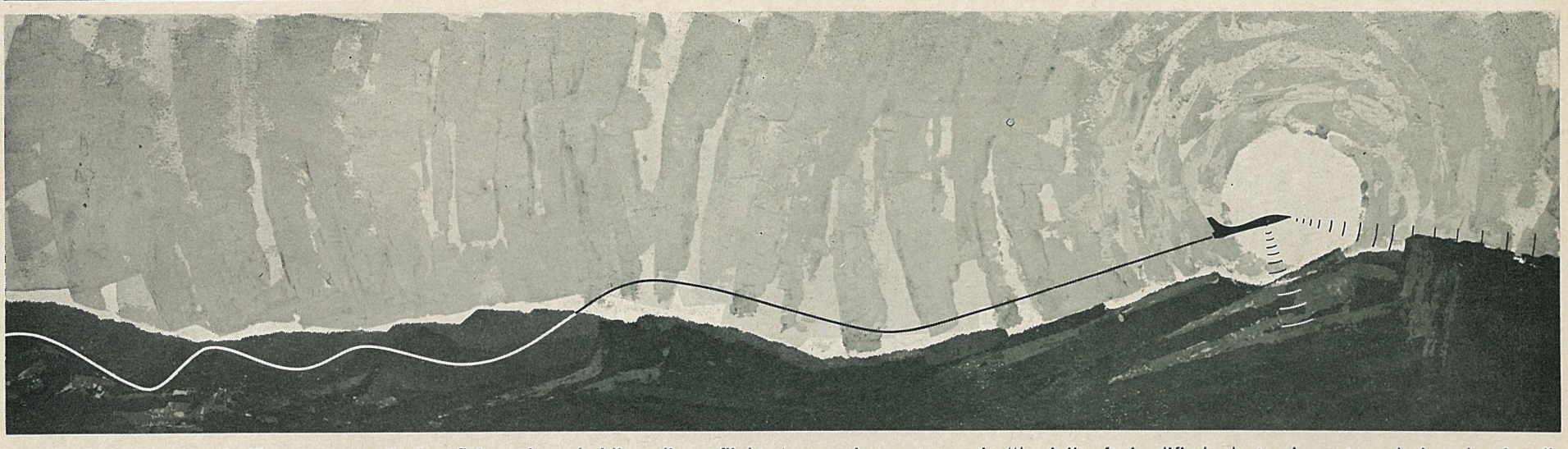
Information on activities may be obtained from Mary Gates at ext. 2249 or Cook at extension (radio) 2325.

Icy Greens and Cold Defied by Linksmen

EDWARDS RS — Icy greens and winds up to 25 knots recently greeted Antelope Valley Management Club golfers touring the Crystalaire Country Club at Pearlblossom.

Winner of the third flight was GD/Astro's George E. Watkins of Edwards Rocket Site who posted a scratch 105, but with a 27-stroke handicap came in with a net 78. A. D. Jorgensen of Astro took third in the championship flight.

Possession of the rotating club trophy passed from Astro to General Electric, this year's winner.



FLYING LOW—Sketch illustrates speedy low-flying plane holding direct flight path safe distance above all obstacles with GD/Electronics-developed system. Non-scanning antenna is "brain" of simplified electronic system designed primarily for military craft.

'Ground-Hugging' Planes Guided Over Obstacles by GD/E Device

A refined electronic flight system to guide low-flying planes safely over surface obstacles has been designed and developed by General Dynamics/Electronics Division at San Diego.

The "terrain avoidance system," as it is termed, permits "ground-hugging" flight with a safe distance maintained at all times above anything beneath. Thus, a craft can be kept on its flight path even though flying over mountain ranges, tall buildings, high-tension lines.

The simplified GD/Electronics system is designed primarily for military aircraft, explained J. E. Bowen, GD/Electronics product manager of airborne radar and terrain avoidance. However, it can be adapted for commercial use, he said.

"It will be most valuable to high-speed military planes required to fly at extremely low altitudes of a few hundred feet to avoid enemy radar and surface-to-air missiles," Bowen continued. "Also, the system can guide the pilot in foul weather landings and takeoffs, during night missions, or over unfamiliar terrain."

Bowen heads a team of marketing specialists presently contacting various branches of the military in a sales effort which would allow full-scale production of the new electronics system.

A flyable system now is being fabricated as a development model for demonstration, said J. L. Brooks, chief engineer for airborne radar, responsible for the system's development. It is due for flight test in early 1962.

Heart of GD/Electronics' terrain avoidance system is a nonscanning antenna, eliminating complex mechanisms and computations, explained Roger Olson, systems engineer in charge of the project during its later stages.

Entire system consists of a forward-looking radar, radio altimeter, electronic analog computer which provides either a pilot display or automatic control.

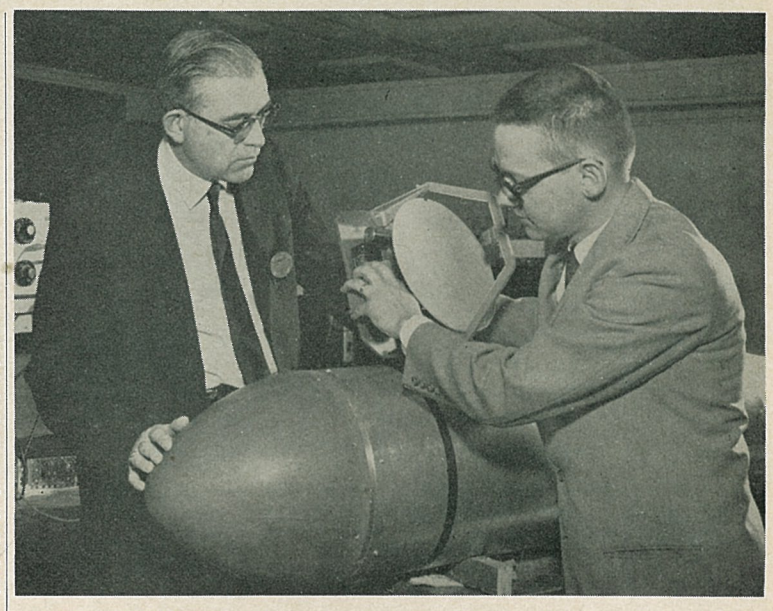
Electronic components are housed in aluminum pods, approximately 14 inches in diameter and six feet long. One pod is positioned on the underside of each wing.

"The system will enable a high-speed craft to fly safely at very low altitude," said Olson. "However, mission requirements and type of terrain will dictate the height the pilot chooses to maintain above the ground.

"The system is now ready to go on present high-speed craft, but looking to the future, it will perform equally well on planes not yet built, which will fly supersonically at low altitudes."

First studies on such an obstacle avoidance system began several years ago within the former electronics engineering section of GD/Convair. Present project which culminated in a workable system this fall, was initiated within GD/Electronics.

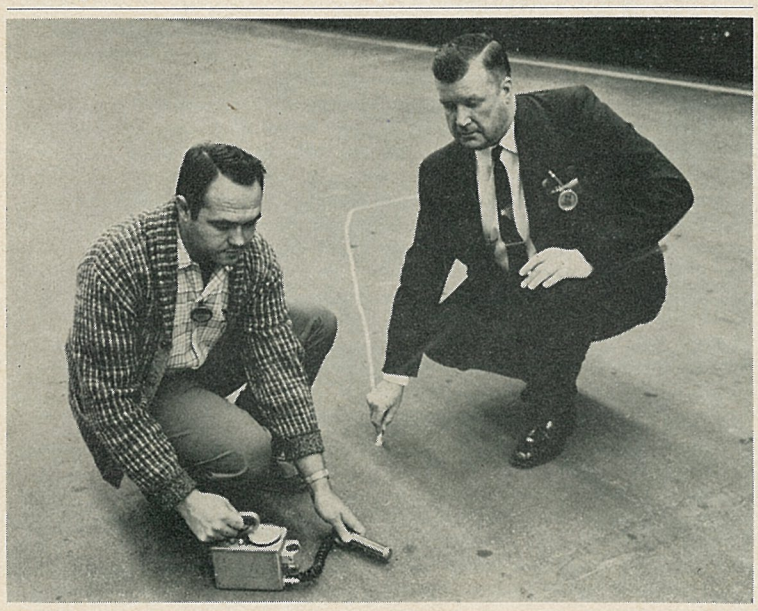
Team assigned to development and fabrication includes James Boelens, detectors and automatic gain control circuits; Mitsuo Ishihara, computer, indicator, and power supplies; Steven Molnar, microwave; James Williams, antenna; Fred Knight, servos and transducers; MacDonald Nelson, mechanical design.



NEW CONCEPT—J. L. Brooks, GD/Electronics-San Diego chief engineer for airborne radar, and Roger Olson, systems engineer, examine antenna of recently-developed terrain avoidance system. Note aluminum pod to house GD/Electronics flight system.

Personnel Officers Hear Magers of FW

E. L. Magers of GD/Fort Worth's Dept. 3 addressed the annual Conference of Systems Personnel Officers of the University of Texas and its branches recently.



ATOMS AT WORK—Health Physicist Joe Hall uses Geiger counter to follow path of radioactive isotope moving through underground pipe line. Dept. 25 General Foreman G. S. Dean traces path with chalk.

'Lost' GD/Fort Worth Sewer Line Traced With Ease, Using Isotope, Geiger Counter

They've found another "peaceful use for atomic energy" at GD/Fort Worth.

After installing a new sink in a test lab facility, workmen sought to link the sink to an existing sewer line. Working with a 21-year-old blueprint, workmen dug four feet underground. But the sewer line wasn't there. The blueprint was off.

G. S. Dean, general foreman construction, called Joe Hall of health physics, for a Geiger counter and radioactive isotope.

The isotope, attached to a long wire, was pushed down the sewer line. As it moved along Hall traced its route with his Geiger counter.

Health Physics Administrator F. L. Paschal Jr. admits the application was novel at GD/Fort Worth, though Hall had predicted the possibility two years ago in an Employee Suggestion.

Do You Hear Me?

System For Voice Warnings To Pilot Introduced in B-58

A dulcet female voice breaks the silence of a B-58 pilot's cockpit to announce: "Left manifold pressure low."

The tape-recorded message continues at intervals until either the pilot makes an adjustment or the situation corrects itself.

Twenty such "caution messages," connected to 50 inputs from vital areas in the B-58, form the Hustler's new voice warning system (VWS). The system supplements the airplane's existing light warning system, conveying the warning vocally instead of visually.

Purpose of the new system, slated for installation on production Hustler No. 103 and on, is to shorten the pilot's reaction time to existing problems.

"Lights which warn the pilot of an existing problem in from 30 to 40 areas appear on a panel to the pilot's right," explained W. L. Gappa, senior aerosystems engineer. "A master caution light on the center panel directly in front of the pilot also comes on whenever warning occurs.

"The voice warning will simply supplement these existing warning devices. We know that in some cases, especially when the pilot is concentrating on some particular phase of flying, he might well hear the voice before he sees the lights."

If the pilot hears the voice warning, "Left manifold pressure low," for example, before seeing the warning light, he might save precious seconds in taking corrective action. Seconds can be crucial when the plane is traveling supersonically.

Messages are recorded in priority order, from 1 through 20. After hearing a message, the pilot may override to get the next voice warning on the list—if there is one. Otherwise, the message will continue until the problem is corrected.

Time required for the voice to "come on" after the system detects trouble is about a half second. In most instances, light and voice warnings—for all practical purposes—come at the same time.

All three stations in the B-58 receive the same message.

The VWS works at any altitude. A "landing gear unsafe" voice warning, for instance, will come on if the pilot cuts his speed too low on landing, or if he's flying too fast after takeoff with landing gear down.

Nerve center of the VWS, which uses the same switches as the light warning system, is an electronic black box about 10 by 6 inches in size.

"But the two systems operate independently," Gappa said. "If something goes wrong with one, the other will keep operating."

Nortronics Division of Northrop Corp. built the system to GD/Fort Worth specifications. They also supplied the female voice which may or may not be standard usage for subsequent messages.

J. V. Crotty, GD/Fort Worth assistant project engineer in charge of the program, recently demonstrated the system for Air Force representatives at Hawthorne, Calif.

Low-Level Pod Drop Scheduled Over Tonopah

Hustler No. 4 was to make a low-level pod drop over Tonopah Test Range this month, then fly home for Christmas.

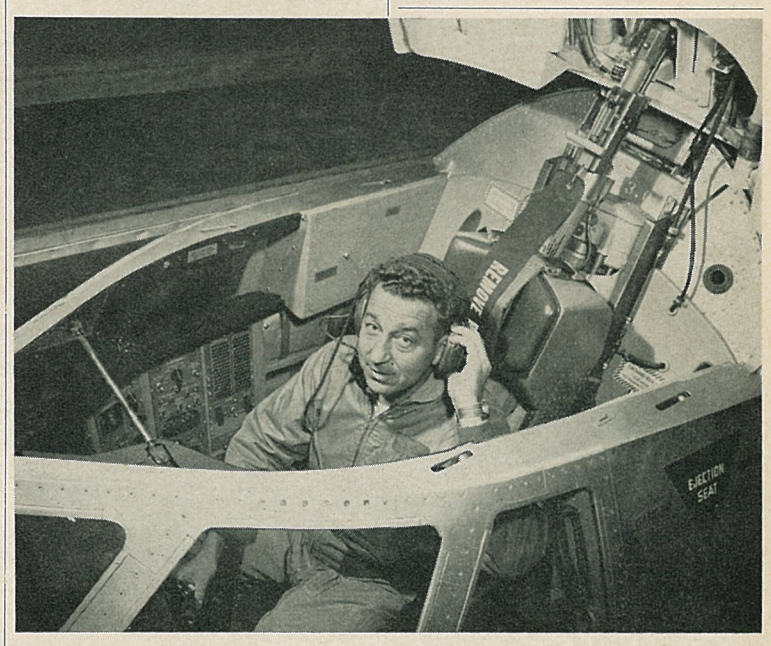
Returning for a brief period from flight headquarters at Kirtland AFB are crewmen Earl Guthrie, pilot, Grover Tate, bombardier-navigator, and O. D. Lievely, DSO.

No. 4 was scheduled to make several drops, winding up its part in the two-component pod-drop program this year.

Inclement weather caused several flight postponements for No. 42, however, and this plane is expected to end its task in January.

Hustler No. 38, the second B-58 used in TCP drops, is now being modified to carry additional bombs. The ship will be used in another drop upon completion of modification and a shakedown flight.

One of No. 4's remaining drops will be over the Salina, Kan., range, where the tank can be recovered.



HELLO THERE!—Mike Keller of flight department checks out tape-recorded "caution" message which is part of voice warning system, slated for installation soon on B-58 Hustlers. Light-warning system is on pilot's panel to his right.

A Merry Christmas to ALL General Dynamics

Since my last Christmas and New Year message to you, our country has had one more year at peace. All of us in General Dynamics can take pride in the share our Corporation has played in contributing to the stability and strength of the free world.

1962 promises to be another demanding year. Threats from Communism, economic competition from abroad, and requirements for increasing efficiency at home will make for a year of hard work and change. We Americans are strangers to neither. We can take pride in the qualities of initiative, determination and imagination which are ours to draw upon for the tasks and opportunities ahead.

As we assess the future at this year end, it is wise for us to remember once again that as a nation and, I might add, as a corporation we can accomplish much as a team, but that no team is better than the effort made by its individual members.

To each one of you may I express thanks for your contribution during the past year. Your Board of Directors joins me in all good wishes for Christmas and the New Year. May the traditional joys of family, of giving, receiving and sharing, be yours to the fullest.

Frank Pace Jr.
Chairman of the Board

GD

ASTRONAUTICS EDITION

GENERAL DYNAMICS NEWS

Vol. 14, No. 26 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, December 20, 1961

Warren Atlas Sites Finished Ahead of Sked

WARREN AFB—Approximately five weeks ahead of original schedules, the final Atlas launch complexes under construction at this Wyoming base have been turned over to the Strategic Air Command.

This is Warren III.

Ceremonies at the base and also at Complex 11 near Nunn, Colo., on Dec. 12 marked completion of tasks associated with activating these series "E" or semi-hard launch facilities.

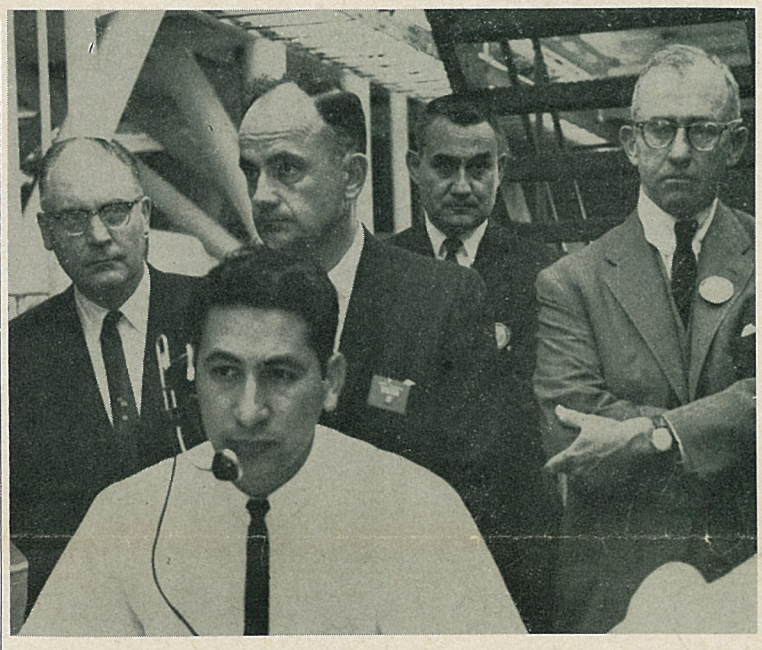
Col. W. E. Todd, SATAF commander here, praised General Dynamics/Astronautics and all associate and subcontractors on the project for completing these facilities well ahead of schedules.

"While final figures are not available at this time, it is estimated your efforts have saved an estimated $1 million for the Department of Defense and the taxpayer," Col. Todd said.

Among GD/Astro executives taking part were Mortimer Rosenbaum, executive vice president; P. M. Prophett, director of base activation; W. L. Van Horn, Atlas program director; E. J. Huntsman, base activation manager for "E" and "F" bases; and L. I. Medlock, GD/Astro operations manager here.

Air Force officials attending included Maj. Gen. D. R. Ostrander, vice commander, BSD; Brig. Gen. W. N. Rader, 13th Air Division commander; Col. Todd; Col. George T. Chadwell, 389th Strategic Missile Wing commander; and Col. James W. Yeater, 566th

(Continued on Page 2)



INTENT—Absorbed in composite test of Atlas missile at GD/Astro, being conducted by engineer Oscar Rendon, are, from left: W. P. Gullander, Dynamics executive vice president; Dr. J. V. Charyk, Under Secretary of Air Force; W. W. Withee, Astro vice president-research and engineering; and Frank Pace Jr., chairman of Dynamics board of directors.

GD/Astro's Pay Checks Will 'Grow' Next Month

Beginning early next year, General Dynamics / Astronautics employees will take home bigger (physically) pay checks! The new ones are nearly 15 inches long.

While dimensions of the check itself remain unchanged, a newly-enlarged detachable stub accounts for the increased length, and permits inclusion of additional payroll information for each employee.

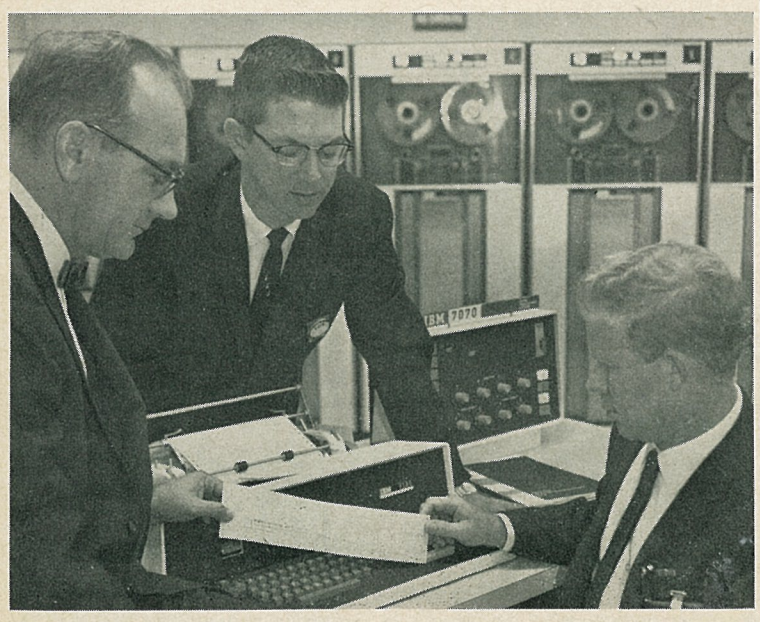
The change in check format will result from use of GD/Astro's newly-acquired IBM 7070 computer system to handle payroll and print the checks. Using magnetic tape as an information storage medium, the computer will handle the complete payroll in five hours, compared to nearly five days for the present punched-card method.

Newly added to check stub listings are such items as specific breakdowns of hours worked (regular time, overtime, vacation, sick leave, etc.); total taxes withheld and total deductions; and "year to date" totals for social security and disability insurance deductions.

In addition, the new stub notes employee and dependent group insurance charges individually; itemizes association dues withheld; includes tool deductions; and indicates tool balance remaining.

Deserving careful attention is the employee's social security

(Continued on Page 2)



NEW LOOK—GD/Astro's new long payroll check holds attention of C. E. Chapman, payroll supervisor; E. A. Gingrich, senior programmer; and A. N. Hubbs, supervisor.

Does GD/Astro Have Your Right Address?

GD/Astro employees who have moved during 1961 are asked to be sure their new address is on file with the company. Cards for this purpose are located at all time clocks.

Preparation of W-2 forms for 1961 income tax returns will begin in the near future, and up-to-date address information is required to insure prompt delivery to all employees. Distribution will begin late next month.

Gullander Given New Responsibility; Famme GD/Convair President

W. P. Gullander's responsibilities as executive vice president of General Dynamics last week were extended to include the Corporation's western divisions, as well as the eastern divisions which have reported to him for some time.

The announcement was made at a Board of Management meeting in San Diego. Henceforth, all division executive heads report to him. Gullander and all Corporate staff executives continue to report to Earl D. Johnson, Dynamics president.

At the same time, J. H. Famme, formerly GD/Convair vice president and general manager, was named GD/Convair president.

To fulfill his expanded duties, Gullander is expected to divide his time between San Diego and New York headquarters, according to the press of business.

Gullander came to General Dynamics in 1960 after eight years as vice president-finance of the Weyerhaeuser Co., of Tacoma, Wash. A native of Big Rapids, Mich., and graduate of the University of Minnesota, Gullander was with General Electric Co. for 22 years, holding executive posts including chief traveling auditor and manager of subcontract operation for the Aircraft Gas Turbine Division and district manager, secretary and treasurer of the General Electric Supply Co.

Famme, veteran Convair engineering and production executive, was director of manufacturing development for western divisions when he was assigned to GD/Convair last spring as assistant division manager-operations and later was vice president and general manager. He has been with the company more than 25 years.

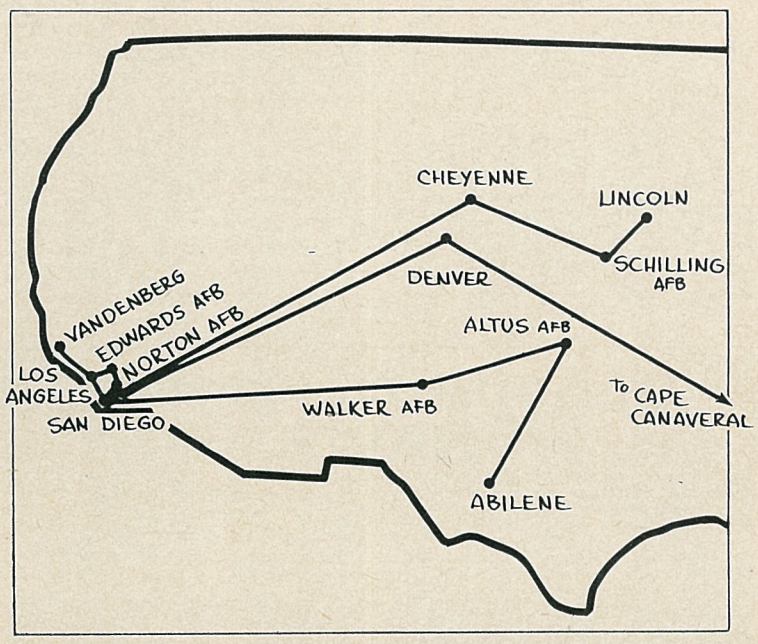
Airlift Adds Another 240

An additional Convair 240 aircraft has been made available to General Dynamics/Astronautics and was pressed into service last week supporting Atlas missile bases in New Mexico, Oklahoma and Texas.

With GD/Convair flight crews, the airlift operates eastbound on Monday, Wednesday and Friday. It travels direct to Roswell, N.M., (Walker AFB), then moves on to Altus AFB, Okla., and terminates at Abilene, Tex. (Dyess AFB). The following day it reverses this route in returning to San Diego.

Like other airlifts supporting Atlas test and operational bases, this service provides a means of swift movement of urgent, critical material needed in the program. At the same time it affords direct passenger capabilities normally not available

(Continued on Page 2)



MANY DIRECTIONS—Multiple airlifts being flown in support of Atlas missile program are reflected here. A new service, utilizing Convair 240 aircraft flown by GD/Convair pilots, went into operation last week. It connects San Diego with Roswell, Abilene, and Altus.

Log Book Entries

Official Notices

GD/Astronautics payroll next year will be run on a computer and new checks including employee's social security number and address will be issued.

These two items on each check should be compared with employee's social security card number and home address. Payroll (Dept. 191) should be notified immediately of a difference in social security number, and/or a change of address form processed for a difference in address.

Correct recording of these items is important to each employee.

C. E. Chapman,
Supervisor, Dept. 191.

Promotions

MAIN PLANT

Promotions to or within supervision effective Dec. 4.

Dept. 101-1, Business Data Processing: To clerical supervisor, R. T. Johnson.

Dept. 144-2, Support Quality Control: To inspection asst. supervisor, R. Gross.

Dept. 170-4, Organization and Systems: To clerical supervisor, C. R. Bowen. To office services asst. supervisor, E. D. Caggiano.

Dept. 193-2, Industrial Accounting: To accounting asst. supervisor, J. E. Neff.

Dept. 210-0, Operations Administration: To factory methods supervisor, T. R. McColloch.

Dept. 220-1, Manufacturing Control: To manufacturing control asst. foreman, R. W. Landis.

Dept. 250, Plant Engineering: To asst. foreman, C. W. Carlson, J. McMinn, L. G. Mulryan.

Dept. 322, Support Publications: To support publications supervisor, G. D. Hone. To support publications asst. supervisor, C. P. Rose.

Dept. 333-2, Off-Site Logistics: To support logistics asst. supervisor, J. R. Benson, E. T. Schaechterle.

Dept. 351, Field Modification: To inspection general supervisor, F. B. Shockley. To support calibration group engineer, N. A. Benson. To inspection asst. supervisor, B. W. Paul. To asst. foreman, D. K. Bostick.

Dept. 510-3, Engineering Management: To asst. project engineer, P. J. Swanson.

Dept. 521-2, Engineering Administration: To engineering task control asst. supervisor, A. E. Holzman.

Dept. 833-1, Stores and Traffic: To receiving and stores asst. foreman, G. K. Parker.

AFMTC

Dept. 571, GD/Astronautics Operations: To asst. foreman, D. R. Gowin.

DYESS AFB

Dept. 618, GD/Astronautics Operations: To activation engineering asst. supervisor-base, James Bone, E. H. Erickson, R. E. Porter, B. P. Stanton, M. R. Wick. To asst. foreman, F. M. Grieco, D. R. Harwood, W. E. King, O. R. Shultz, E. H. Mitchell. To transportation asst. foreman, H. R. Hensley.

LINCOLN AFB

Dept. 616, GD/Astronautics Operations: To asst. foreman, J. F. Dana, L. E. Lewis, B. F. Szakaly.

PLATTSBURGH AFB

Dept. 620, GD/Astronautics Operations: To production control foreman-base, S. J. Middleton. To inspection supervisor, L. M. Pisz. To launch complex asst. supervisor, L. Spurgeon.

VANDENBERG AFB

Dept. 576, GD/Astronautics Operations: To site engineering asst. supervisor-base, R. C. Cook. To asst. foreman, F. A. Zaccagnino.

WALKER AFB

Dept. 619, GD/Astronautics Operations: To cost control supervisor, J. E. King. To inspection asst. supervisor, C. A. Koehler, M. W. Vittitow.

Service Emblems

MAIN PLANT

Service emblems due during the period Dec. 16 through Dec. 31.

Twenty-year: Dept. 191-0, Merne Johnson; Dept. 220-6, A. E. Mack; Dept. 335-3, J. W. Guihn; Dept. 450-0, J. C. Duffy; Dept. 523-2, H. H. Waugh Jr.; Dept. 579-5, L. D. Brown Jr.; Dept. 604-0, C. W. Shoupe; Dept. 773-0, G. C. Lang.

Fifteen-year: Dept. 521-7, C. P. Freeman; Dept. 759-0, G. W. Stacy Jr.

Ten-year: Dept. 145-0, H. O. Wendt; Dept. 152-0, E. S. Armstrong; Dept. 153-0, J. A. Thornbury; Dept. 170-1, C. E. Shuler; Dept. 250-3, E. L. Brush; Dept. 324-3, W. E. Martin; Dept. 404-0, D. J. Boatwright; Dept. 451-0, B. A. Brinkman; Dept. 461-0, Hazel M. Boyle; Dept. 599-5, R. R. Loomis; Dept. 759-0, J. R. Johnson; Dept. 844-1, F. A. Seaborg.

ALTUS AFB

Ten-year: Dept. 617-3, J. R. Mercier.

EDWARDS RS

Ten-year: Dept. 575-3, O. B. Eustice.

FORBES AFB

Ten-year: Dept. 614-8, H. J. Herod.

LINCOLN AFB

Twenty-year: Dept. 616-1, L. O. Miller.

WALKER AFB

Ten-year: Dept. 619, W. G. Hawkins, A. V. Martinez.

Personals

MAIN PLANT

We wish to express appreciation to GD/Astronautics Employees' Con-Trib-Club and the Emergency Aid Committee for their generous assistance during my recent illness. Their timely aid prevented loss of our home, by relieving the added financial burden during our emergency.

Donald Cox (Dept. 344-2) and family.

Births

MAIN PLANT

BALDWIN — Son, John William, 8 lbs., 5 oz., born Nov. 27 to Mr. and Mrs. John G. Baldwin, Dept. 324-3.

KRUGLE—Son, Scott Alan, 6 lbs., 2½ oz., born Oct. 24 to Mr. and Mrs. Jacob C. Krugle, Dept. 451.

SCOTT—Son, Cabray W. Jr., 7 lbs., 6½ oz., born Nov. 30 to Mr. and Mrs. C. W. Scott, Dept. 220-3.

SCHILLING AFB

GHIELMETTI—Son, Geffery Bryan, 8 lbs., 8 oz., born Dec. 5 to Mr. and Mrs. Jack Ghielmetti, Dept. 615-5.

WEBER—Daughter, 8 lbs., 5 oz., born Nov. 30 to Mr. and Mrs. R. G. Weber, Dept. 615-9.

VANDENBERG AFB

EVANS — Son, Theodore Michael, 9 lbs., 2 oz., born Nov. 21 to Mr. and Mrs. Dexter Evans, Dept. 576-4.

FALSTAD—Daughter, Dana Kathleen, 7 lbs., 7 oz., born Nov. 24 to Mr. and Mrs. Ken Falstad, Dept. 576-8.

GENSICKE—Daughter, Kay Denise, 7 lbs., 12 oz., born Aug. 29 to Mr. and Mrs. E. H. Gensicke, Dept. 324-1.

LeCOURIS — Son, Brian Constas, 7 lbs., 2 oz., born Aug. 25 to Mr. and Mrs. C. P. LeCouris, Dept. 324-1.

PASTOR — Son, Daniel Harrison, 7 lbs., 7 oz., born Sept. 2 to Mr. and Mrs. Daniel H. Pastor, Dept. 324-1.

WAFTER—Daughter, Dawn Marie, 6 lbs., 9 oz., born Oct. 23 to Mr. and Mrs. James Wafter, Dept. 576-3.

WIERZBICKI—Son, Mark John, 7 lbs., 14 oz., born Oct. 26 to Mr. and Mrs. Ben Wierzbicki, Dept. 576-1.

Deaths

MAIN PLANT

FIFE—James F., Dept. 536-3. Died Dec. 12. Survived by parents, Mr. and Mrs. J. W. Fife; brother and sister.

MAGUIRE — Willie F. (Guard Captain), Dept. 130-1. Died Dec. 12. Survived by wife, Velma.

MONGER—Mary Ellen, Dept. 101-6. Died Dec. 13. Survived by sons, Teddy Ray (13) and Gary Dean (10); mother, Mrs. Francis Gingrich.

Atlas Sites Finished Ahead of Schedule

(Continued from Page 1)

Strategic Missile Squadron commander.

Completion of Atlas activation at Warren gives the Air Force its first all-missile wing, the 389th SMW. Its facilities include Warren I, II and III.

Maj. Gen. Ostrander, on behalf of Maj. Gen. T. P. Gerrity, BSD commander, presented Medlock with the "Commander's Award." This is a special recognition for his services to BSD and the Air Force. Col. Todd received an Oak Leaf Cluster for his AF Commendation Medal.

Warren III is the third and final series "E" operational base. Earlier this year "E" series facilities were completed at Fairchild AFB, and Forbes AFB.

Airlift Adds 240 To Connect Bases

(Continued from Page 1)

through other means. A recent division notice directs that all employees utilize the airlifts whenever possible for passenger service on a seats-available basis.

Travelers must have an official travel order or authority to travel as guests of General Dynamics. All reservations must be made in advance with the Astronautics reservation center, ext. 636.

Other airlifts available include: a Convair 240 service to Warren AFB, Schilling AFB and Lincoln AFB on Monday, Wednesday and Friday with returns the following day; a round-trip daily flight (week days) to Los Angeles and Vandenberg AFB; direct service to Norton AFB, Edwards AFB and Vandenberg AFB; and three round trips weekly to Cape Canaveral, Fla.

Airlifts depart from San Diego at the Convair Flight Terminal at the north end of Lindbergh Field.

General Dynamics NEWS

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Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton, Jeff Fishel.

GD/Electronics (San Diego) news contacts: Info. Tech., Helen Wood, CY-8-8331, ext. 11; Milit. Prod., Betty Freeby, CY-8-4641, ext. 1377.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 8-7311, ext. 2961. Staff: Dave Lewis, editor; Louise Sutton, Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226/5279. Staff: James Combs Jr., editor; Carol Colbert. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.



BIG WRAP—Most of 119 GD/Astro folk who turned out to wrap gifts for annual Christmas party for needy children last Saturday are shown here, with results of their work. More than 600 gifts were wrapped, tagged, sorted and placed under tree.

Atlas 4-A Pioneers Sought in Survey

CAPE CANAVERAL — An attempt is being made to locate all present and former employees who were here when Atlas 4-A was launched.

Atlas 4-A was the first Atlas missile slated for flight test. It was launched from Complex 14 here June 11, 1957, by a crew headed by John Harrison, test conductor, with K. W. Jeremiah as chief test conductor.

Those who were on hand are asked to forward an "AVO" to the Base Manager, General Dynamics/Astronautics, Box 999, Cocoa Beach, Fla., which includes his or her correct name and present mailing address.

GD/Astro Checks Will 'Grow' in '61

(Continued from Page 1)

number now added to the check itself to insure that earnings are credited to the proper employee's account.

And the employee's address now appears on the check stub.

"We feel use of the new stub format will assist employees in maintaining personal records of earnings and deductions," explained C. E. Chapman, payroll supervisor (Dept. 191). "It also provides an extra margin of error prevention."

"The matter of address is a case in point," he added. "This information is important for tax purposes and its appearance on the stub may remind employees to report any address changes they may have during the year."

The IBM 7070 computer prints check information at a rate of 600 lines per minute, turning out 200 checks in a like period. All payroll information (including tax computations for 12 states, due to GD/Astro's wide-spread base activation operations) is now contained on one roll of magnetic tape.

This same data previously filled 30 trays of punched cards.

The compact 7070 is fully transistorized. It reads 42,000 characters per second, making 1,650,000 logical decisions in a minute!

Change-over from cards to tape has been under way in GD/Astro's business data processing (Dept. 101-1) for nearly six months, under direction of G. R. Jacob, general supervisor; Bruce Piper, supervisor; and E. A. "Mike" Gingrich, senior programmer.

Xmas Decorations Banned After Dec. 22

General Dynamics / Astronautics employees who have brought personal decorations, ornaments, trees, etc., into the plant must remove them on departing at the end of their regular work shift Friday (Dec. 22).

As a safety precaution, security patrols will remove all decorative items at the start of the Christmas holiday season, according to A. C. Anderson, fire chief. Excluded will be decorations erected by plant engineering.

Off-Site Employees Contribute To Kansas Community Funds

SCHILLING AFB—Four Kansas communities in which General Dynamics/Astronautics employees live while activating Atlas launch facilities for Schilling AFB felt the generosity of these employees in recent weeks.

Checks totaling $4,000 were presented to community fund drives in four localities. Of this amount, $3,500 was donated through Employees' Con-Trib-Club. The remainder was a corporate gift.

Salina, Kan., site of Schilling AFB, received $3,500 of which $3,000 was from Con-Trib-Club and $500 from Astronautics. C. R. Jackman, Astro operations manager here, and Howard Dodd, representing Con-Trib, made check presentations recently to Tom Aird, campaign chairman for the Salina Community Chest.

In nearby McPherson, Kan., Charles Bernard presented a $300 Con-Trib-Club check to Dale Miller, chairman of the United Community Chest of that city.

Lindsborg, Kan., and its Community United Fund received $100 from Con-Trib-Club with Nancy Bracewell presenting the check to Merrill Tarnstrom, general chairman; E. G. Larson, campaign chairman; and H. J. Weltmer, publisher of the Bethany Press of that city.

Another $100 went to the Abilene United Fund from Con-Trib-Club. Don Collingham of Astro made the presentation to L. E. Garrison and C. L. Brainard, drive officials.

Card Lesson Series Offered at Walker

WALKER AFB—A series of informal bridge lessons offered by the GD/Astro Wives Club here has proved so successful additional sessions are being planned for early next year, according to Mrs. William Burbeck, instructor.

A beginning class and an advanced class will be held on a rotating location basis. Those interested may contact Mrs. Marilyn Onyon at 623-3857.

Wives Gathering Shoes For Children

WALKER AFB — GD/Astro Wives Club here has been conducting a highly successful drive to provide shoes for needy Roswell school children.

On Dec. 7 some 182 pairs of shoes were turned over to one elementary school here. Plans call for continuing the program as long as shoes are needed. Mrs. C. A. Krueger is chairman of the group.

HISTORY OF JAZZ SPEAKER'S TOPIC AT CLUB SESSION

CAPE CANAVERAL — Don Williams, GD/Astro design engineer here, recently created a stir among Management Club members when he spoke on the history of jazz.

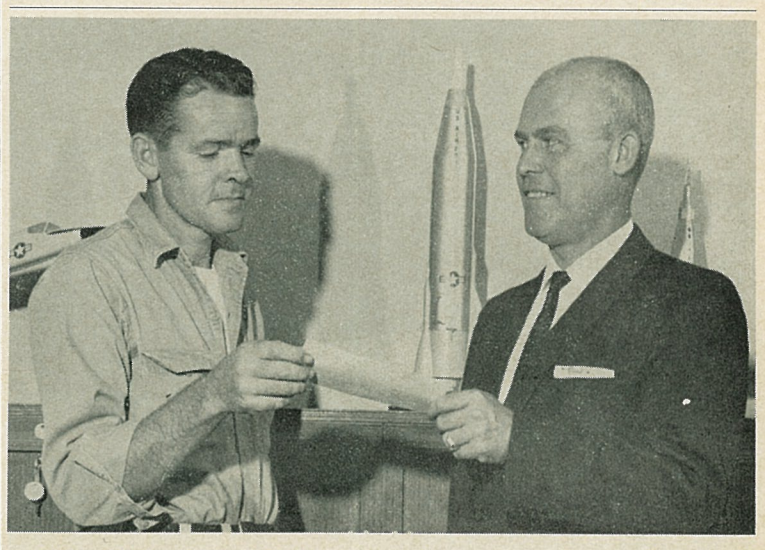
Utilizing bits of recorded music, Williams talked on old and new records, jazz and how it started and grew.

As a high school student in Greencastle, Ind., Williams played with the DePauw University Symphony Orchestra. After attending Purdue and graduating, Williams alternated his time between symphony orchestra dates and dates with modern dance bands. He has devoted a great deal of his leisure to studying jazz and copying records from many eras.

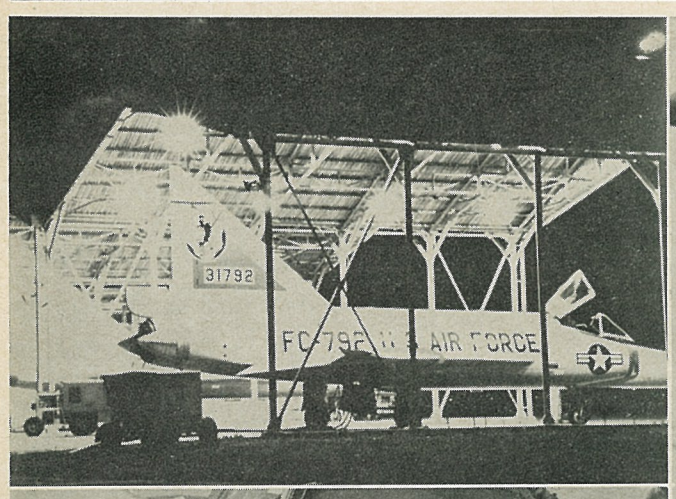
Flanagan Will Head Training Directors

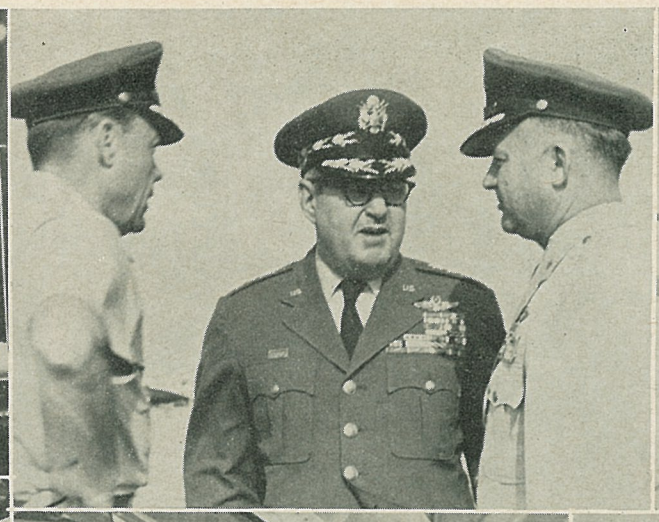
CAPE CANAVERAL — Twin honors were bestowed on Robert Flanagan, employee services and educational services representative for GD/Astro here, recently.

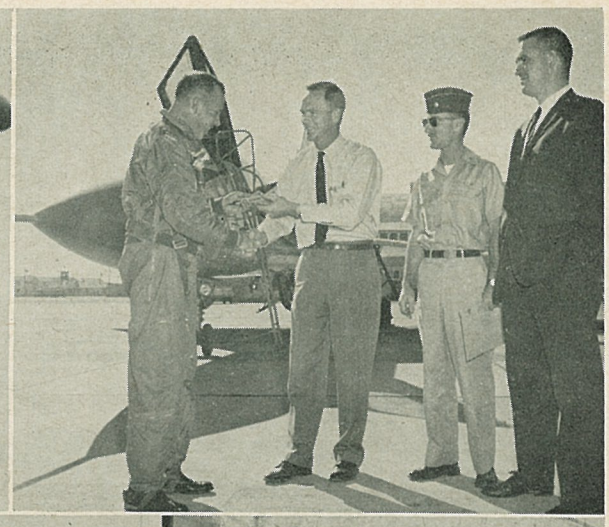
On the same day Flanagan was named president of the Canaveral Area Chapter, American Society of Training Directors, and also first vice president of GD/Astro Management Club at AFMTC.

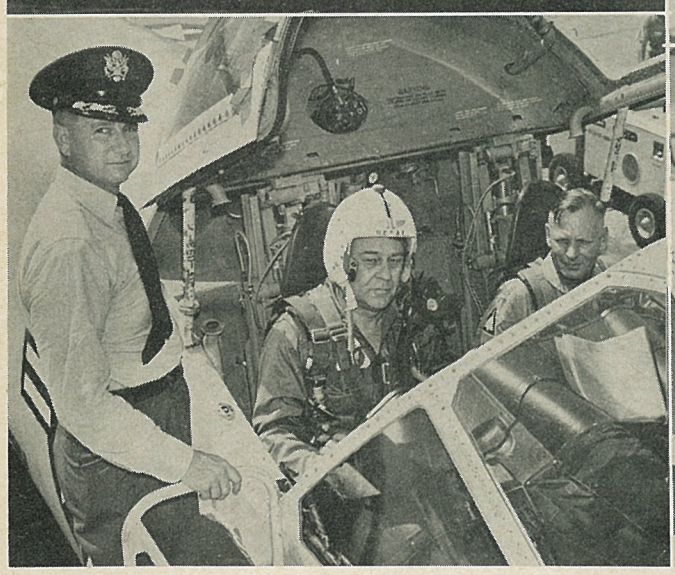


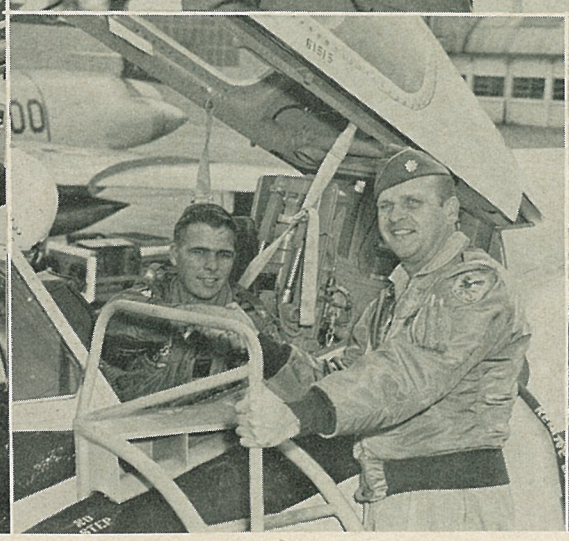
BIG, BIG GIFT—GD/Astro employees at Cape Canaveral, through action of Con-Trib-Club, recently presented $10,000 to United Appeal, largest gift yet made to this group by Con-Trib. Astro's W. H. Strange, left, presents check to C. W. Bollum, chairman of Missile Range committee for drive.

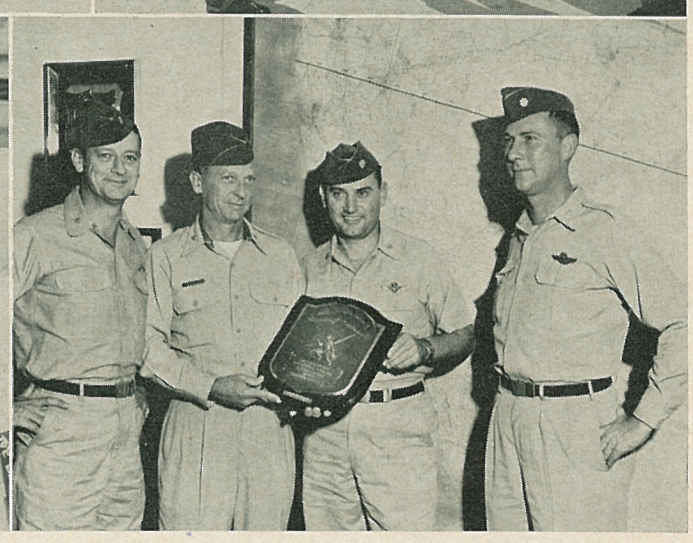












SCOUTING THE DELTAS—In center photo at top Gen. Curtis E. LeMay, USAF Chief of Staff, is congratulated by Lt. Gen. Robert M. Lee, ADC commander (left) and Col. Glenn T. Eagleston, Tyndall AFB commander, after scoring bull's-eye at William Tell interceptor weapons meet, flying in Convair TF-102. At top left is F-102 at Itazuke Air Base, Japan, shown on alert at ready pads. Top right: Brig. Gen. Henry C. Newcomer (left) commander, Los Angeles Air Defense Sector, is congratulated by Collins C. Broadwater, GD/Convair field service rep, after first solo flight in F-106 at George AFB, Calif. Others are Maj. Jack A. Rockwell of 329th FIS and R. L. Robertson of Hughes Aircraft. In lower left, Maj. Gen. J. E. Taylor, adjutant general of Texas National Guard (center), goes through TF-102 cockpit check with Lt. Col. N. O. Didear, commander of 136th Air Defense Wing, before first ride. At left is Lt. Col. R. H. Taylor, commander of 147th Fighter Group, Ellington AFB. Lower center: Maj. John M. Odiorne, director of operations, 64th FIS, Paine Field, Wash., congratulates Lt. Gerald S. Miller on flight that put him over 1,000-hour mark in F-102s. Lower right: Air National Guard readiness plaque is awarded 125th Fighter-Interceptor Group, Florida. From left: Lt. Col. Irving Wadlington, senior AF adviser; Col. Charles Riggle, Florida assistant adjutant general for air; Lt. Col. James Higgins, acting Florida Air National Guard commander; Lt. Col. John Taylor, 159th Fighter Interceptor Squadron commander.



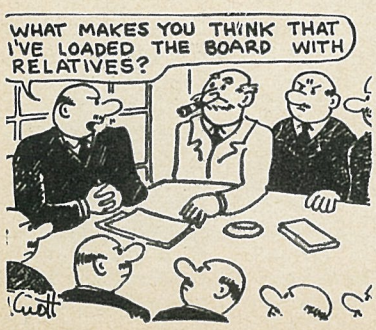
VIP CLASS—American Airlines executives and managers line up beside Astrojet 990 on GD/Convair flight line during recent capsule briefing on Convair jetliner.

American Airlines Executives Attend 990 Familiarization

American Airlines executives were at San Diego the first of this month to get acquainted with the Convair 990.

A special two-day "capsule" familiarization was conducted by American Airlines training specialists from Tulsa, Okla. Besides an overall look at the jetliner, the 16-hour briefing concentrated on special features peculiar to the 990, said R. W. Bragg, manager of technical training services, at the GD/Convair plant to coordinate the sessions.

Included in the group attending were city managers from six cities throughout the United States which will be on the 990's schedule when it goes into service with American.



Key American Airlines men at the Dec. 7-8 briefing were W. B. Davis, vice president, maintenance planning and service engineering; N. S. Rice, director technical training and qualifications, both from Tulsa; F. J. Mullins, vice president, field activities, from New York City.

Other administrators were W. G. Conrad, vice president, Northern Group; R. F. Lambert, vice president, Southern Group; G. W. Shiles, vice president, Central Group, all headquartered at the New York City downtown office; W. H. Miller, vice president, New York Area, headquartered at LaGuardia airport; H. D. Silliman, vice president, Chicago Area, O'Hare airport.

City managers were B. J. Hugger, Cincinnati; R. K. Pfunder, St. Louis; R. Radcliffe, Dallas; J. A. Tompkins, Detroit; J. H. Woods, Boston; J. E. Gainer, Washington, D. C.

Technical training specialists doing the briefing were H. L. Patterson, K. W. Metzinger, J. P. D'Angeli.

Customer transport service personnel at GD/Convair assisted in arrangements during the group's stay.

SOCIAL SECURITY TAXES TO INCREASE FOR ALL IN 1962

General Dynamics Corporation employees everywhere will join other wage earners in paying higher Social Security taxes on wages earned during 1962.

Basically, the increase is from the 1961 rate of three per cent to the 1962 rate of three and one-eighth per cent. This applies to the first $4,800 earned during the year. At the same time, General Dynamics' contribution per employee will increase by the same amount.

For those earning over $4,800 the increase will be about $6 for the year, from the present $144 to $150 per year. Deductions for Social Security purposes appear on payroll check stubs under the heading of "F.I.C.A."

Increased taxes make possible increased benefits which went into effect last August. They include earlier retirement for men; higher benefits for widows; increased income for those eligible for minimum benefits only; and the possibility of earning more after retirement while still drawing Social Security benefits.

Deductions under the program are automatic and require no action on the part of employees.

They Love it!

Smith Family Spans Country Responding to Astro Duties

PLATTSBURGH AFB — Probably one of GD/Astronautics' "most traveled" employees, and first to be assigned to Astro's operations here, is Robert C. Smith, complex supervisor.

His work with GD/Astro has kept the Smith family on the move almost constantly — and they love it.

Smith first joined GD/Convair in 1954, and after working on F-102 projects in San Diego, went to Moffett Field, near San Francisco, for wind tunnel tests on the F-106. In 1957, transfer to Astronautics' Atlas project sent the family to Cape Canaveral where he took part in the first launch of the ICBM.

His Florida experience made him a likely prospect for a move to Vandenberg (then Cook) AFB as the 12th Astro man assigned there. Here he scored another first by participating in the first operational Atlas launch in 1959.

The following year he led Astro work force assigned to Plattsburgh AFB, New York, and scored two other "firsts." Daughter Jennifer Mary was the first child born to an Astro employee here, and Smith was the first launch complex supervisor to be appointed.

The Smith family now consists of his wife, Arline, and—besides Jennifer — daughters Loreen, 15, and Theresa, 11, and son Robert, 8. By coincidence all children are native-born New Yorkers.

"Travel is no hardship," Smith claims. "The youngsters have received an educational opportunity seldom available to those unable to move about the country, and each move has brought new challenges in my work."

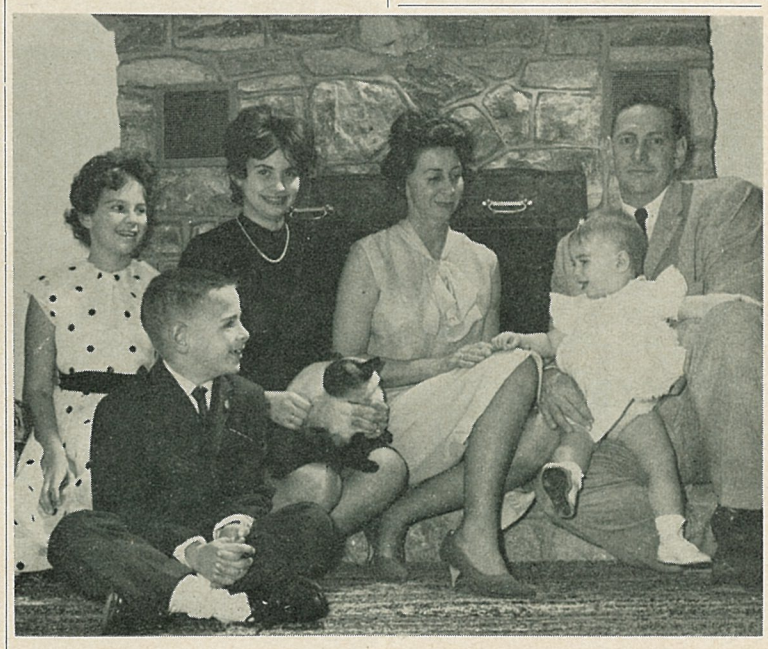
Travel has become a hard-to-break habit for the Smiths. They started their "moving business" even before Smith joined General Dynamics.

He previously spent 12 years in the Marine Corps—on the move.

Harry Lyter, Former Convair Chief, Dies

Harry C. Lyter, 61, former chief of GD/Convair's fire department, died late last month in Tucson, Ariz. He had been ill for some time.

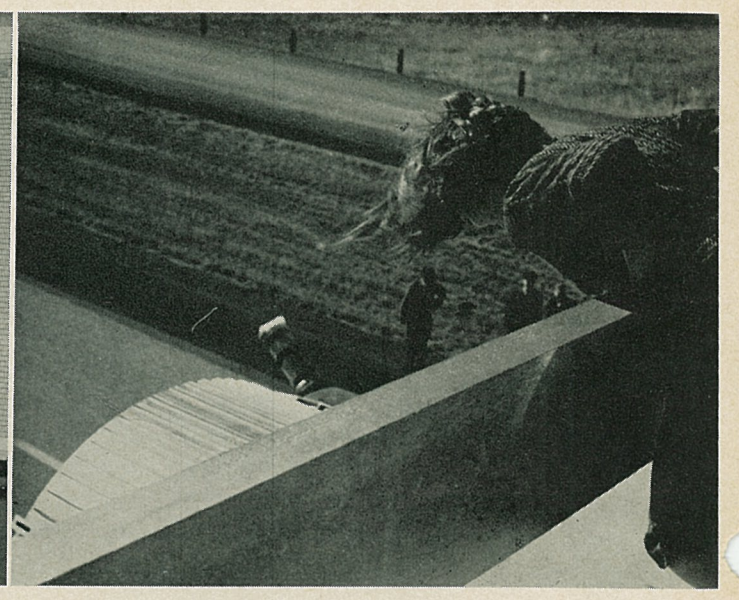
He headed the department for 16 years, prior to his retirement in 1959.



TRAVELING SMITHS—Shown at home in Plattsburgh, N.Y., are Theresa, Robert, Loreen, Mrs. Smith, Jennifer, and Robert C. Smith. Stone fireplace in background was built of rock excavated at 142-foot level from Plattsburgh AFB Atlas launch site.







OFF-SITE SIDELIGHTS—In center, Air Force Secretary Eugene Zuckert receives model of Atlas missile from Cal Fowler, GD/Astro assistant operations manager assigned to Warren AFB. At left, Astro "natives" Bob Verdon and Alice Watters at Warren entertain San Diego visitors John Morgan, Tom Jarrett, Charles Guy, Stan Flanell, Ernie Clay, Len Sabatka. In photo at right Astro's Carol Craw at Warren watches Atlas missile vanish beneath overpass.

Scale Miniatures

Passenger-Less Railway Trains Make Regular San Diego Runs

Although it has more "rolling stock" than any other line in the area, one San Diego railway system has never carried a passenger!

This is the elaborate "layout" operated by San Diego Model Railroad Club, to which GD/Astronautics and GD/Convair employees and adult members of their families may belong.

Subsidies from both ARA and CRA greatly reduce the cost of membership in the club, whose elaborate facilities — including over 1,750 feet of "main line" track — are located in Balboa Park's House of Charm at San Diego.

ARA and CRA members may join for only $10 in membership fees, and monthly dues of $2. Normally the initiation fee is $25.

About half the club's membership consists of GD/Astro or GD/Convair employees who take advantage of the lower rates to enjoy their hobby.

"These trains are not toys," Bill Worthington of Astro, past president, emphasized. "They are as near to scale miniatures as it is possible to make them."

The club layout includes HO and O-gauge systems, an HOn3 (narrow gauge) line, and a trolley line. Total length of combined track (including sidings, etc.) is estimated at over 7,000 feet.

"The hobby can be as expensive or inexpensive as the enthusiast cares to make it," Worthington explained. "Most people start with a ready-made train costing as little as $10. From there, many like to build their own models, either from kits with varying degrees of complexity, or from 'scratch.'"

Members normally provide their own "rolling stock," and operate it on the club layout.

Club meetings are held every Friday evening in the House of Charm. First meeting of the month is devoted to HO-gauge operation; the second is a business session; the third is for O-gauge operation; and the fourth is a work night.

Club rooms are open for public visits Friday evenings, and on Sundays from 1 to 4:30 p.m.

"Because the trains and layout are quite valuable, we limit children's participation to sons (or daughters) of regular club members," Worthington said. "Club regulations set a minimum age of 21 for regular members."

Employees interested in modeling, railroads, or railroading—the subject often appeals strongly to students of recent history—have been urged to visit the Balboa Park layout, or contact club members for additional information.

MULTI-WEAPON B-58 SHAKEDOWN

Shakedown flight for B-58 No. 42, recently converted to a multiple-weapon carrier, was to be made "sometime after mid-December."

The production Hustler will be used in a series of flights to test out airplane performance with its added underwing bomb load.

Ground vibration tests were carried out on No. 42 last month. A series of hook load tests was to follow.

Following initial flights out of Fort Worth, No. 42 and crew will move on to headquarters at Kirtland AFB, N. M. Most bomb drops are scheduled for White Sands Missile Range.

Preliminary testing of the new multiple-weapon configuration was carried out earlier this year on No. 59.

500 Sons, Daughters Attend Xmas Party

WALKER AFB — More than 500 sons and daughters of GD/Astronautics employees here were on hand Dec. 10 for a children's Christmas party staged under joint sponsorship of ARA and the Astro Wives.

Held at the Roswell Community Center, the party included games and treats for children.



CLEAR TRACKS—Don Taylor and ARA Commissioner Dave Fyffe are shown at one of several control stations on San Diego Model Railroad Club's layout in Balboa Park. ARA club has full use of park facilities, holds regular meetings there.



HI THERE, SANTA!—Look what came down chimney at GD/Fort Worth Recreation Clubhouse with sleigh and gifts—a cute little "Santa Claus" named Donna Price, clerk in Dept. 24-7.

Bunker Hill Has 22 B-58s

Bunker Hill AFB counted 22 combat-ready B-58s on hand following delivery of production Hustlers 80, 86 and 87 in early December.

Deliveries to the SAC base in Indiana continued well on schedule, with Nos. 82 and 84 tentatively slated for delivery in December also.

Crewmen from 305th making acceptance flights were:

No. 80—Col. H. B. Robertson, pilot; Maj. G. G. Schutt, navigator-bombardier; and 1st Lt. J. J. Cappel, DSO.

No. 86—Maj. H. E. Flook, pilot; Capt. L. Broome, navigator-bombardier; and 1st Lt. C. R. Leonard, DSO.

No. 87—Maj. D. J. Younger, pilot; Capt. L. R. Friedman, navigator-bombardier; and Capt. R. E. Ost, DSO.

Rumbaugh Assigned To Centaur Position

W. H. Rumbaugh, veteran GD/Convair executive, has joined Astronautics as senior Centaur program administrator-operations, according to E. D. Bryant, vice president-operations.

Rumbaugh replaces J. L. Milliorn who has taken a new assignment with program planning and control.

Except for a two-year Navy hitch, Rumbaugh has worked for Convair since 1940, principally in field operations work both at San Diego and Palmdale during F-102/106 development.

With Needy

Sharing During Holiday Season Traditional with GD/Astro Folk

From Cape Canaveral to Plattsburgh, San Diego to Spokane, and many points between, General Dynamics/Astronautics folk this week are helping to brighten the lives of the less fortunate.

Traditional at Astro is the practice of sharing with the needy at Christmas. This week the practice reaches a climax.

Just how far this help extends, how many families are aided and in exactly how many different locales is not known. However, at every point where Astro people work, plans are being pushed to help others. This may involve a small group, a department or a whole installation, or an individual.

In San Diego last Saturday, 150 of the area's most needy children were feted in a party at the main plant cafeteria. They played games, ate lunch and enjoyed entertainment. When they went home each carried a number of gifts and toys as well as clothing. Administering this program were several hundred volunteers. Con-Trib-Club furnished the money, Salvation Army the names of the needy. Many other groups helped.

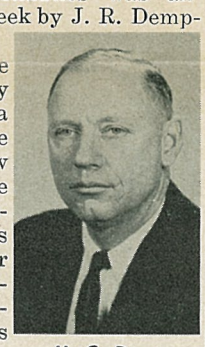
Tomorrow (Dec. 21) a team of Astro Divers will take to the Bldg. 2 reflection pool following the first shift to collect coins tossed there by employees. These coins, plus others placed in Christmas candles, will be used to provide for needy families.

San Diego area groups within Astro have "adopted" more than 40 needy families, exhausting the names supplied by Emergency Aid. These families will receive gifts, food, clothing and sometimes money to meet their most pressing needs. Other groups are giving to funds, orphanages and welfare agencies.

Regardless of the gift or where it is given, Astro folk feel that sharing is a wonderful way to enjoy a Merry Christmas.

Dow Named Counsel For GD/Astronautics

Appointment of H. Cushman Dow as chief counsel for General Dynamics/Astronautics was announced last week by J. R. Dempsey, president.



H. C. Dow

Dow is a Yale University alumnus and a 1948 graduate of Harvard Law School. Before joining GD/Astro, he served as chief counsel for Pacific Telephone's northern counties area, headquartered at Sacramento.

A native of Boston, Mass., he spent five years with the San Francisco law firm of Pillsbury, Madison and Sutro, and later served as general attorney for Western Pacific Railroad.

During World War II, Dow served as a Navy gunnery officer aboard cruisers in the South Pacific, attaining the rank of lieutenant commander.

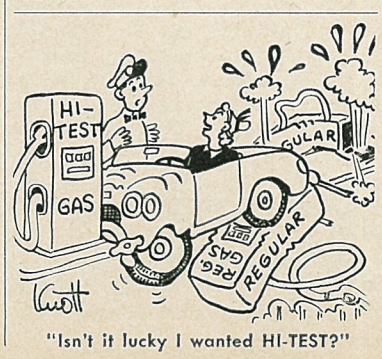
He will report directly to Dempsey.

Astro Daughter Wins Tap Dancing Laurels

Proud GD/Astronautics parents are Donald G. (Dept. 143-3) and Eleanor (Dept. 141-1) Clark, whose daughter, Brenda Lee, 7, is attracting local attention with her tap-dancing routine.

Brenda Lee appeared in a local dance studio's recital, "Holiday on Stage," after only one year's instruction. Following the performance, she received an invitation to appear in a Naval Training Center Christmas program.

She portrays "Miss Poinsettia" in a white satin costume designed and made by her mother. It is decorated with red sequined poinsettias and green sequined holly leaves.



"Isn't it lucky I wanted HI-TEST?"

SD State's Courses Listed in Bulletin

Bulletins describing San Diego State College's Campus Evening Program for the spring semester are available now.

They list late afternoon and evening courses that apply toward bachelor's degrees, master's degrees, certificates in idustrial management and public administration.

They may be obtained from the college's Extended Services Offices in the Education Bldg., by writting, or by calling JU-2-4411.

They also will be on hand for distribution at GD/Convair's educational services office in Bldg. 15, Plant 1.

Stamp Club Members Sought at GD/Astro

Plans for formation of an ARA-sponsored Stamp Club if sufficient employee interest is expressed have been announced at General Dynamics/Astronautics.

The proposed organization will operate similarly to other ARA activities, with regular meetings for philatelists who will hold auctions, conduct stamp trading, hear guest speakers, etc. An organizational session is tentatively scheduled for next month.

GD/Astro employees interested in formation of a Stamp Club have been asked to contact Haydon "Rocky" LaNois, Dept. 535-5, ext. 2991.

Teen-Age Business Enterprise 'Cleans Up' on Xmas Corsages

"Industrialites," teen-age business group sponsored by GD/Convair Management Club, is deep in production for holiday contracts.

The 19 high school boys and girls in the Junior Achievement group have already completed several hundred corsages for company Christmas affairs. They supplied 425 for the annual Management Club dance last weekend and 175 for the Rose Canyon holiday party.

They will move on into production of other products after the first of the year, said J. A. Gliebe, JA board of control chairman for the Management Club.

They will be turning out shoe covers of the type used in the company to protect wing surfaces on the assembly line. Later, they will make animal pincushions for general sale.

Directing the group are W. T. Toon, committee chairman; H. G. Barnes, A. J. Krumweide, and John Woodhead, advisers.

The GD/Convair Management Club also is underwriting overhaul cost of power equipment used by JA groups at the San Diego headquarters.

"Several of the machines, such as band saw, jig saw, drill presses, have been down due to lack of small, inexpensive parts," explained Gliebe. "The Management Club is paying for the parts and Harold Washington, GD/Convair retiree, is volunteering his time for installation."

'Drive Dry!' Chief Safety Engineer Urges Drivers at Holiday Time

"Holidays are danger days," warns M. C. Val Dez, General Dynamics/Convair chief safety engineer, as thousands of General Dynamics people prepare for holiday trips over the next two long weekends.

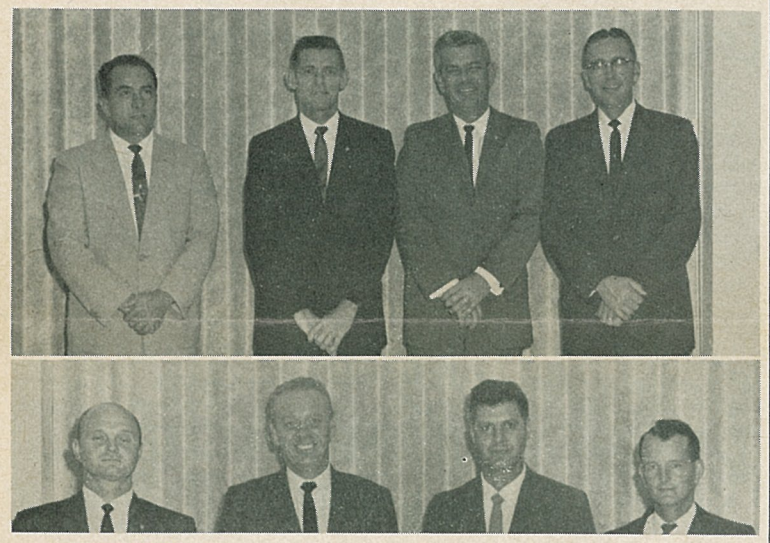
"December is always one of the deadliest traffic months of the year," he said. "Above all, drive dry—over half of Christmas traffic deaths involve drinking drivers.

"Drive safely—yield the right of way, keep at safe distances, travel at safe speeds, and signal properly.

"As an extra safeguard, use safety belts."

Safety belts are still on sale at both Plant 1 and Plant 2 safety cribs at $6.25 per set.

Plant 1 safety crib is open 7 a.m. to 6:30 p.m.; Plant 2, 9 a.m.-5.30 p.m. Both are closed during 12-12:30 p.m. lunch hour.



AFMTC CLUBMEN—In upper photo are new officers of GD/Astro Management Club at Cape Canaveral. From left, they are Ken McCarthy, 2nd vice president; John Riels, secretary; John Hughes, president; and Robert Flanagan, 1st vice president. Below are new members of board of directors, R. D. Beasley, L. I. Fraunfelder, D. M. Maximovich, W. H. Baker.

AF Officer in Training at GD/Convair Receives Outstanding Service Citation

Capt. David L. Keller, now assigned to General Dynamics/Convair under the Air Force Education-with-Industry program, was awarded the AF Commendation Medal last month.

Presentation was made Nov. 17 by Lt. Col. C. W. Atterholt, chief of San Diego Air Procurement District, former AF plant representative at GD/Convair.

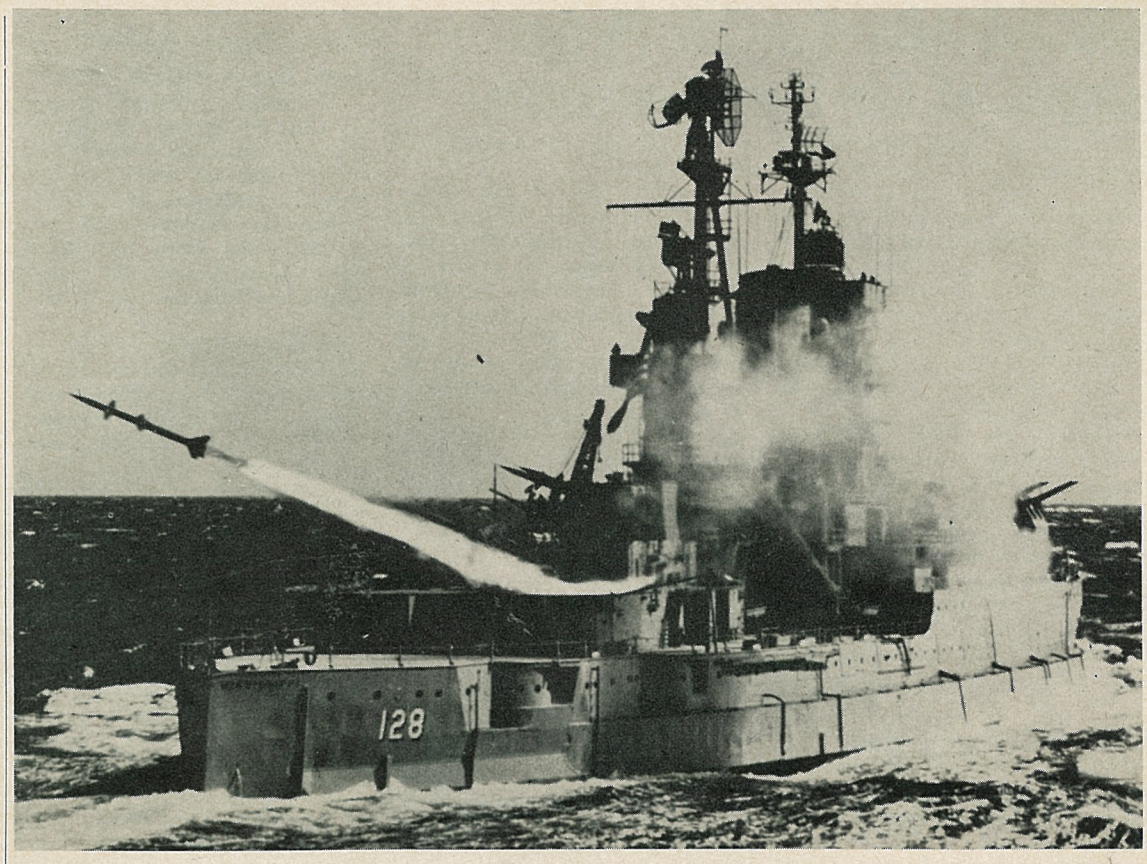
Captain Keller was cited for meritorious service while serving as OIC of the Tanker Maintenance Branch and Supervisor of Maintenance of the Organizational Maintenance Squadron, and Job Control Officer of 11th Bombardment Wing, Altus AFB, Okla. He was stationed there from September, 1958, to June of this year.

The citation read, "Captain Keller demonstrated an outstanding ability in planning, scheduling and controlling aircraft maintenance functions and all related activities. The keen foresight, devotion to duty and aggressive action displayed by Captain Keller reflect great credit upon himself and the United States Air Force."

Capt. Keller and Capt. Dewey K. K. Lowe reported at GD/Convair plant in September of this year for the 12-month AF training program. The program, concentrated on industrial planning and procurement operations on an executive level, is coordinated by educational services.



CITED—Capt. David L. Keller (center), AF officer in training at GD/Convair, receives AF award from Lt. Col. C. W. Atterholt. At left is R. H. Nall of GD/Convair educational services.



EARLY PHOTO—Released in 1955, this was among first photos shown publicly of Terrier missile. It is taking off from deck of converted battleship USS Mississippi.

Commercial Submarines Held Feasible

NEW YORK, N.Y. — Commercial submarines and underwater tankers today "are technically quite feasible" and at higher speeds will be more efficient than surface vessels, according to a top nuclear submarine research engineer.

Dr. H. E. Sheets, chief research and development engineer of General Dynamics Corporation's Electric Boat Division, told the American Society of Mechanical Engineers annual meeting here that underwater vehicles are needed for transport and to explore and exploit the full potential of the oceans.

"The greatest commercial incentive for submarines at this time would appear to be their use on special routes where surface ships cannot be used, such as under the Arctic, resulting in considerable savings," Dr. Sheets said.

"In other cases, high-speed requirements may prove the submarine the most economical transport. Submarines may also be required for access to undersea resources."

Dr. Sheets indicated that marine cargo in the future might be carried in several different ways. For certain medium values of the speed-to-displacement ratios, he said, the submarine is the most economic means of sea transport. The surface ship would remain more economic for handling bulk loads.

Electric Boat Orders Big Dock

A graving dock, capable of drydocking the Navy's largest nuclear submarines, will be built at General Dynamics / Electric Boat, Groton, Conn.

Plans call for the new facility to extend 512 feet into the Thames River, angling out in a southwesterly direction from the Groton shore. The dock itself will be 70 feet wide with a 35-foot draft at mean low tide.

With a capability of 12,000 tons, it will be capable of handling any existing nuclear submarine. Electric Boat is currently building seven ships of a new class of Polaris-firing nuclear submarine, which, with a 7,000-ton displacement, will be the heaviest undersea craft built.

The dock will be flooded by opening a gate at the west end and drained by two 30,000 gallons-per-minute pumps.

Construction is expected to take a year.

Terrier 'Won Spurs' in '53 By Knocking Down Drone

(Following is No. 74 installment in continuing history of General Dynamics products. It deals with early development of Terrier missile, currently primary air defense for 26 Navy warships.)

Design of the prototype Terrier was finished early in 1949 at San Diego where Vultee Field projects had been transferred in 1947.

Additional requirements were cranked into a series of five small production lots over the next four years while an extensive program of flight testing was carried out.

Starting in 1950, simulated shipboard equipment at NOTS—Inyokern was used. Other flight testing was conducted aboard the laboratory ship USS Norton Sound after September, 1951, and by Operation Development Force in the Atlantic, 1952-53.

Terrier came of age Aug. 12, 1953, when the test ship, USS Mississippi, launched a full-configuration missile equipped only with smoke-puff warhead and knocked down a high-flying F6F drone.

Preparations to make the missile operational had been foreseen earlier by the Navy when personnel were assigned to engineering at San Diego in 1950.

Formal courses in theory and operations were started in 1951 with first graduates organized into Guided Missile Unit 21 (assigned to Mississippi) and GMU 23 (Norton Sound). The Navy missile school at Pomona was activated early in 1953 to offer a 24-week course.

Concurrently, two heavy cruisers, the USS Boston (CAG-1) and USS Canberra (CAG-2), were converted in late 1955 and early 1956 as the Navy's first Terrier launchers.

Both cruisers had the aft 8-inch turrets removed, twin launchers installed, added below-decks storage, servicing and loading equipment, and special search and guidance systems as part of the conversions.

Terrier I (XSAM N-7) was a needle-nosed missile 11.4 ft. long and 10 inches in diameter, powered with a solid propellant rocket motor using a beam riding guidance system. Main control surfaces were 12-inch cruciform "wings" near the midpoint of the missile body. In launching, the Terrier was mounted atop a solid-propellant booster rocket section that fell away in flight.

Airline Groups In Jet Training

Three foreign airline groups are going through flight training for Convair jet transports given by production flight at the San Diego plant of General Dynamics/Convair.

Twenty-three REAL / Varig crewmen arrived from Brazil to begin a 5-week course last week. Of the group ten are flight captains; ten, flight engineers, and three, ground school instructors. They are now in ground school classwork and becoming familiar with the Convair 990 in the cockpit procedures trainer.

Four Viasa pilots from Caracas, Venezuela, are completing their flight training this week, as is one representative from Cathay Pacific Airways Limited of Hong Kong. Cathay Pacific's delegate, N. J. Marsh, assistant supervisor of operations, audited the entire course preparatory to setting up flight training for flight crews from the Hong Kong airline early in January.

NEWS Issue of Jan. 3 Will Reduce in Size

Due to year-end holidays which cut into production time, the next issue of General Dynamics NEWS (Jan. 3) will have fewer pages than usual and a single edition will be published. No recreation news can be carried.

The regular eight-page, multi-edition paper will resume with the Jan. 17 issue.

F-102 Squadron Safety Leader

An F-102-equipped fighter squadron has won the PACAF Tactical Unit Flying Safety Award for keeping its planes in the air an entire year without an accident.

The 509th FIS, based at Clark Air Base, Philippines, flew over 7,000 hours in F-102s for a twelve-month period ending September, 1961, to win the flight safety award.

In presenting the plaque, Maj. Gen. Chester W. Cecil, Deputy Chief of Staff for Administration and Logistics at PACAF Headquarters, said: "This award reflects not only an outstanding record in flight safety, but also indicates sound maintenance support and operational ability."

Lt. Col. Russell D. DeMont, 509th commander, praised the entire squadron for its performance, "My heartfelt thanks goes to every man who works on the F-102 at Clark."

GD/Convair field service representative with the F-102 squadron is W. C. Butterfield.

$350,000 Astro Con-Trib Pledge Biggest of San Diego Companies

Largest single commitment ever made to the United Fund of San Diego County — $350,000 — was pledged last week by General Dynamics/Astronautics Employees' Con-Trib-Club.

This marks the third year in which Astro employees have made or equalled the largest annual gift to United Fund. Last year's pledge of $200,000 was tops in the area.

Pledges are paid to United Fund in four quarterly installments and funds utilized to support 97 San Diego County health and welfare agencies. In addition to the $200,000 given United Fund last year, Con-Trib-Club added almost $30,000 more in gifts to individual agencies within United Fund, hard pressed to continue operations when the overall campaign fell short of its assigned goal.

Meanwhile, across the nation at Atlas test and operational bases where Astronautics employees are assigned, additional grants are being made each week to local organized giving campaigns. Gifts are in the name of local Con - Trib - Clubs supported by Astro employees through payroll deduction.

Complete results of the drive at San Diego to increase Con-Trib-Club membership are pending, with an estimated six per cent of tab cards distributed to nonmembers still out. Included are many employees on travel status or assigned to off - site bases and other points on temporary duty. Until all cards are accounted for, a final report will not be made.

Late last week participation in Con-Trib-Club stood at about 85 per cent for the San Diego area work force. Dollar pledges made during the campaign were approximately $538,000.

'Birds' Awarded By Many Clubs

Year's end is "turkey time" for the 45-odd ARA activities now active at GD/Astro with many clubs awarding birds.

This year was no exception, and while most groups chose recipients through raffles or door prize drawings, several made birds the object of activity-oriented contests.

Typical was Astro Divers' contest which opened when numbered abalone shells were tossed into La Jolla Casa pool. Skin divers plunged after them and brought up one each. A drawing followed in which Tom Emery, Herm Reicher and Bob Kent held lucky numbers and "got the birds."

("That water was cold!" Kent shivered.)

Coineers awarded one turkey in a door prize drawing and presented a second to the member displaying the best coin exhibit at the December meeting. Explorers Club presented one to ARA Commissioner Larry Beaver whose design was chosen as official club emblem. They earlier held a drawing for another bird.

The joint ARA-CRA Fencing Club will use their turkey to honor club officers and members "contributing most to fencing" at a special dinner, and Ralph Sanderlin won a turkey in Pistol Club's "luck shoot." Pistol fan Ken Bunker received another in a drawing.

Hours at their amateur radio "rigs" won turkeys for Radio Club members Al Levon and Stan Miller as first and second shift members making the most radio contacts around the world during the year. Trailer Club will take three of the prime birds as the main course of a potluck feast on their New Year's weekend outing.

Sixteen other turkeys went to active ARA participants in raffles held by Astro Motors (2), Astro Lens (2), Bridge Club (2), Garden Club (5), Rockhounds (4), and Model Railroad Club (1).

Guard Captain Dies After Long Service

Funeral services for W. F. Maguire, General Dynamics/Astronautics security guard captain, were held last week. Maguire died of natural causes Dec. 11.

An officer in Astro's security guard force since it was organized, Maguire previously served as an officer and guard at General Dynamics/Convair.

Anderson Shifted To Post With Astro

H. L. Anderson, former manager of quality control for GD/Electronics' Military Products division, has joined GD/Astronautics as assistant to R. E. Steele, chief of off-site quality control.

A 10-year General Dynamics Corporation veteran, Anderson was chief of inspection at GD/Convair's Palmdale flight test center prior to his association with GD/Electronics.

MGT. CLUB KEGLERS SLATE COMPETITION

Management Club bowlers at GD/Astro start a round of singles competition Jan. 13-14 that could lead to all-expense paid trips to Toledo, Ohio, later this year.

Comanche Bowl, La Mesa, will be the scene of opening rounds of a singles handicap bowling tournament, with subsequent eliminations selecting 20 top keglers to compete in a NMA tournament in Los Angeles March 3-4. Top finishers will go to the NMA Bowling Classic May 5-6 in Toledo.

Entry blanks, already distributed to club members, must be returned by Jan. 10.

Swimming, Skating Facilities Offered

Among a variety of reduced-rate activities offered GD/Astro employees through ARA and the Industrial Recreational Council (IRC) are indoor swimming and roller skating.

Now available at all employee services outlets are free tickets for IRC swim night at Mission Bay Plunge, which are valid for employees and members of their immediate families. Next swimming session is from 7 to 9:30 p.m., Jan. 20.

On Jan. 15, IRC tickets will admit employees and dependents to Skateland, Front and G Streets, from 6:30 to 9:30 p.m. Rental skates are available for a nominal fee.

Trailer Club Outing On Desert Scheduled

A New Year's outing to Joshua Tree National Monument is planned by ARA Trailer Club which has invited all employees with trailers or campers to come along.

Plans call for a potluck supper to highlight the event, and three turkeys being prepared by club members will be served.

Additional information on the Trailer Club outing is available from ARA Headquarters, ext. 1111, or from R. R. Parga, ARA commissioner, ext. 3740.

Astro Dept. 'Adopts' 11 Needy Families

GD/Astronautics field test engineering (Dept. 578-0) will "adopt" 11 needy families for Christmas.

Rather than exchange cards within the department, the group asked employee services to suggest worthy families needing aid during the season.

Field test will provide clothes and toys for the children, and arrange for families to enjoy a Christmas dinner with all the trimmings.

Want Trim Figure? Sign Up, Ladies!

A special physical fitness program for ladies only will be sponsored by ARA during 1962.

Free classes, open to all women employees of GD/Astronautics and dependents will be conducted from 4:30 to 6 p.m., Tuesdays, in the ARA Clubhouse. First session is Jan. 9.

John Powell of AFPRO at GD/Astronautics is instructor, and will direct specialized exercises to build trim figures. For additional information, contact Dee, ext. 1111.

Fencers to Eat Turkey Dinner

Convair Fencing Club, a joint ARA-CRA activity, will honor club officers and members who "most benefited fencing during 1961" at a turkey dinner tonight (Dec. 20).

Guests in the home of CRA Commissioner Pete Beyrer will include Ray McNamara, club president; Barbara Proppe, GD/Astro daughter, in charge of club equipment procurement; Mike Hurley, ARA commissioner; two club members; and the Beyrer and McNamara families.

For the second consecutive year the club was host at the San Diego Invitational Fencing Tournament at the downtown YWCA, Dec. 17.

Competition in men's and women's foil pitted more than 50 contestants, with final rounds fenced with electrical weapons. Fencers from 10 area clubs participated.

In an intermediate epee tournament sponsored by the club earlier this month, men fencers from four local clubs took part. The event was won by ARA Commissioner Hurley.

TOP CLUB POSITIONS FALL TO GD MODELERS

General Dynamics model railroaders swept the Dec. 8 election of San Diego Model Railroad Club, with which both Convair and Astro groups are affiliated.

Karl Busch, GD/Convair Dept. 15-6, succeeded Bill Worthington of Astro photo lab, as president. This is Busch's third term as club president. He also is editor of the National Model Railroad Association Bulletin.

George Overlin, GD/Convair Dept. 48-34, was seated as treasurer; Bob Durnell (GD/Electronics, Dept. 5), secretary.

Serving on the board of directors will be Worthington; Ken Pauley (Dept. 31), past treasurer; George French (Dept. 6); James Hamill (GD/E Dept. 5); John Pinson (GD/Convair Dept. 201).

Highlight of the Friday meeting in Balboa Park's House of Charm was a birthday party honoring Astro Commissioner Dave Fyffe.

$1 Turkey Dinners To Mark Christmas

A pre-Christmas dinner is in store for General Dynamics folk based at Astronautics, Convair, Electronics sites at Kearny Mesa and Plants 1 and 2.

Tomorrow (Dec. 21) will see turkey and all the trimmings on the menu at all Prophet Co. cafeterias at Astronautics and Convair. Price is $1, including tax.

Menu is turkey and dressing, cranberry sauce, whipped potatoes, giblet gravy, buttered green peas, tossed green salad, rolls and butter, pumpkin or mince pie, choice of beverage.

Salvage Yards Close Christmas, New Year's

Employees at both GD/Astronautics and GD/Convair are reminded that salvage yards at both San Diego facilities will be closed during both Christmas and New Year's weekends.

January schedule will be:

GD/Convair—Jan. 6 and 20.

GD/Astro—Jan. 13 and 27.



PRIZE WINNER—Ron Ainsworth's photo, taken at Big Bear, was Astro Lens' prize winner of year. It was captioned "To Granny's Pad."

Jan. 8 Deadline For Entering Contest Seeking ARA Emblem

Entries are beginning to trickle in, but there is still time for Astronautics Recreation Association members everywhere to submit their entries in two contests offering merchandise awards as prizes.

Deadline for entering both is Jan. 8.

One contest involves a design suitable for use on ARA emblems, brochures, club patches and letterheads. Featured will be "ARA" with the design suitable for use with the modernistic "GD" for General Dynamics symbol.

A separate contest involves selection of an appropriate name for a select group of volunteers who work throughout the San Diego area in various areas. This group will pass along special information on activities, special events and general ARA operations to fellow employees.

Each entry must be on a separate sheet of paper (8½x11-inches) and must include the submitter's name, department and clock number, home address and plant telephone extension. In case of dependents, also eligible to compete, the name of the employee (father, mother, etc.) must be included.

All entries are to be mailed to Astronautics Recreation Association, mail zone 130-50, at the main plant.

Each contest will award merchandise prizes of $50, $25 and $10 for first, second and third.

Gardeners Ordering Bulbs From Holland

An order for several hundred dahlia bulbs is on its way to Holland as a result of a group purchase arranged at a recent meeting of ARA Garden Club.

Imported bulbs will be obtained directly from the grower at bargain prices. A similar group order for new roses will be taken at the club's next meeting, Jan. 3.

The January meeting will feature pruning and planting demonstrations, and will include election of officers. At the last meeting, Paul Leach, Charles Lewis and Phil Neuhauser were chosen as a nominating committee.

Slide Show Features Coineers Meeting

ARA Coiners will meet at 7:30 p.m. today (Dec. 20) in ARA Clubhouse.

A slide show, "Twentieth Century Odd-Shaped Coins of Regular Issue," from the American Numismatic Association slide library will be presented, and "General Numismatics" has been selected as theme for a coin display.

The dues-paying members showing the best exhibit will win a Christmas turkey. A coin auction will also be conducted.

PLANT BASKETBALL TOURNEY TO START

Regular season play in GD/Astro's annual ARA plant championship basketball tournament will open Jan. 8, with deadline for team entries set for Dec. 28.

Department teams may enter by contacting Tim McPherson, ARA commissioner, at ext. 1111 between 8 a.m. and 4:30 p.m. during the week.

Team managers will be asked to attend an organizational meeting at 5 p.m., Jan. 3, in ARA Clubhouse, to verify entry of their teams.

Games and practice sessions will be held at Municipal Gym, Balboa Park, with teams arranging their own workout periods. Court reservations may be made by contacting Earl Smith, BE-9-4421, after 2 p.m., daily. Basketballs are available from Smith at the gym.

A post season double elimination tournament is planned following regular season play.

Holiday Film Dates Released by Theater

Bookings at the Adams Theater over the next two weekends are:

Dec. 22, 23, 24, 25 — "Come September," with Rock Hudson, Gina Lollobrigida, Sandra Dee; and "The Last Sunset," with Rock Hudson, Kirk Douglas, Dorothy Malone.

Dec. 27—Special children's New Year show.

Dec. 28, 29, 30, 31, Jan. 1—"Guns of Navarone," starring Gregory Peck, David Niven, and "A Thunder of Drums," with Richard Boone, George Hamilton.

General Dynamics people may attend any of the Friday, Saturday, Sunday showings at half price (50 cents) by presenting ID cards at the box office, 33rd and Adams Ave. Children under 12 are admitted free if accompanied by adult.

Sports & Recreation

Big Game Night Draws 175; Rifle Won by Larry Thrall

Over 175 enthusiastic hunters and guests were on hand Dec. 9 to see Larry Thrall, husband of Evelyne, GD/Convair Dept. 3-2, walk away grand prize winner at the Gun Club's annual "Big Game" drawing.

Thrall, who had a choice of a Winchester shotgun or Remington automatic rifle, decided on the rifle.

Staged at Gillespie Field Clubhouse, Commissioner Jack Swank said more than 100 hunters entered their "kills" in the contest. Awards were given by means of a drawing.

Thrall bagged a 165-pound buck in Utah which he had his wife enter in the contest.

Talks by county fish and game officials and a night-trap shooting exhibition highlighted the evening's festivities.

Other prize winners from GD/Convair included C. L. Weathers, hunting book; Doyle Hayworth, gloves; E. E. Carpenter, cooking kit and lantern; Joe Williamson, canteen; K. F. Jones, mittens; Bill McColley, wool socks; R. D. Marks, first aid kit; Bob Osborne, tenderizer; and A. G. Helbig, cuff links.

GD/Astro hunters who nailed a prize were: W. C. Jungemann, axe and buck hunting coat; Dean Hotell, wool socks; and R. L. Hawkins, gas can.

CHUCKAWALLA MTS. FIELD TRIP GOAL

A four-day field trip to the Chuckawalla Mountains over New Year's will be discussed briefly at ARA Rockhounds' annual Christmas party at 7:30 p.m., tomorrow (Dec. 21) at Uptown Hall, Normal Heights.

Equipment on the trip will include a portable generator for lights and power.

Tomorrow's Christmas party program will dwell only briefly on outing plans, as entertainment by members, a gift exchange, movies and a display of lapidary work by the club's first classes in this subject are planned.

Last weekend the club visited Tourmaline Queen Mine, Pala, led by Darrell Nopens, trip chairman.

Atlas Racks Up Perfect Score

Seven successful Atlas missile launches in 25 days!

This record was chalked up by General Dynamics / Astronautics and Air Force launch crews from mid-November to mid-December.

Nov. 18: Atlas 117-D was launched from Complex 12 at Cape Canaveral, carrying aloft an Agena stage.

Nov. 22: Atlas 4-F was launched from Complex 11 at Cape Canaveral. From Point Arguello Atlas 108-D was used to launch an Agena stage.

Nov. 29: A chimp named "Enos" rode a Mercury spacecraft launched atop Atlas 93-D from Complex 14 at Cape Canaveral around the world for two orbits and a successful recovery.

Dec. 1: Atlas 35-E flew from Complex 13 at Cape Canaveral for a flight into the Ascension Island splash net.

Dec. 7: Six days later an Atlas 82-D was launched by a Strategic Air Command crew from Vandenberg AFB to an Eniwetok Island splash net.

Dec. 12: A flight of Atlas 5-F from Complex 11 at Cape Canaveral.



SANTA'S HELPERS—Dancer and Prancer took a powder last week when this lovely quintet of General Dynamics secretaries showed up to "help" St. Nick (Bill Rickman, Prophet Co. manager) in front of CRA Clubhouse. Perched on Santa's knee are left, Jean Gates, GD/Convair, and Betty Freeby, GD/Electronics. Standing (l-r), Dian Gibson, GD/Convair, Valerie Gregory, GD/Astro and Betty Ann Wood, GD/Convair.



ARA DANCERS—Annual ARA Christmas dance drew 900 to El Cortez Hotel Dec. 9. "Head table" is shown in top photo where Mr. and Mrs. J. L. Budros, Dr. and Mrs. A. J. Bellanca, Mr. and Mrs. W. H. Patterson, Mr. and Mrs. J. R. Dempsey, and Mr. and Mrs. R. A. Evans dined.

Hal Napier's 76 Wins Club Golf

Hal Napier's gross 76 was top score among 188 GD/Astro Management Club members taking part in the second annual club golf tournament Dec. 9 at Bonita Valley Country Club.

Ray Lanham was second in the 0-13 handicap bracket with a gross 78, followed by J. W. Dunning with an 80. H. H. Moran finished with a net 65, J. J. Kiszla with a net 71 and R. L. Grant with a net 72 in that bracket.

Harold Wilson's gross 82 was one stroke better than D. E. Merriam's 83 and three strokes better than Russ Luker's 85 in the 14-17 bracket. Placing in order in the net standings were G. M. Loudermilk, 64; L. L. Richardson, 68; and L. L. Siemers, 71.

B. H. Garrett (89), J. J. Boyle (91) and B. J. Neal (92) paced gross standings in the 18-23 bracket. C. R. Cearley (67), Herb Swanson (72) and E. J. Tuszynski (73) were low net finishers in that order.

Another 89, posted by C. J. Kruk, won the 24-36 low gross. E. J. Huntsman posted a 92 and R. H. Taddiken a 95. Larry Kline turned in a net 66, V. W. Dimpel a net 68 and Frank Jenkins a net 68 in that group.

Trophies to all winners will be presented at the Jan. 17 Management Club meeting.

The field this year was 88 players larger than last.

Ainsworth, Rinker Win Photo Awards

Winners in Astro Lens' contest for best black and white photos and color slides during the year were selected at the club's recent meeting.

In the black and white category, "print of the year" was submitted by Ron Ainsworth. Titled "To Granny's Pad," it showed snow-covered pine trees and a rustic footbridge.

"Consider This," portrait of an elderly man with a book, won the color slide class for Ken Rinker, ARA commissioner.

Ainsworth's scenic was made at Big Bear, using a Rolleicord and Kodak Panatomic-X film exposed at 1/50-sec. at f16. The print was on polycontrast paper.

Rinker used electronic flash with daylight Kodachrome in his Exacta. He exposed for 1/50-sec. at f8 using a 135mm lens.

ARA Calendar

(GD/Astronautics Recreation Association has some 45 activities in operation for employees. For information, call ARA Headquarters, ext. 1111.)

★ ★ ★

BASKETBALL — Plant championship season opens Jan. 8. Managers' meeting, 5 p.m., Jan. 3 in ARA Clubhouse.

BRIDGE CLUB—Master point event, Christmas party, 7:30 p.m. tomorrow (Dec. 21), Barcelona Bridge Club.

COINEERS—Meeting 7:30 p.m. tonight (Dec. 20), ARA Clubhouse.

EXPLORERS—Four-day Baja California trip over New Year's. Call ext. 1111 for information.

FREE TICKETS—Tickets for IRC swim night (7-9:30 p.m., Jan. 20) at Mission Bay Plunge, and Skateland (6:30-9:30 p.m., Jan. 15) at all employee services outlets.

RADIO CLUB — Meeting 7:30 p.m. tomorrow (Dec. 21) in radio room, ARA Clubhouse.

ROCKHOUNDS — Christmas party, 7:30 p.m. tomorrow (Dec. 21) at Uptown Hall, Normal Heights.

SNOW SKI — Some openings for four-day trip to Mammoth, Dec. 29 still available. Contact Gene Rockafeller, ext. 2868, for reservations.

STAMP CLUB—Now organizing. Contact Rocky LaNois, ext. 2991.

TRAILER CLUB—New Year's outing to Joshua Tree National Monument. All employees with trailers or campers invited.

WIVES' GOLF — Reservations for January lessons at Mission Valley Country Club, and information on other golfing activity available from Mrs. John Gissell, BR-7-4325.

Oexner Scores Most Contacts With Radio

Members of ARA Radio Club making the most radio contacts from the club's station (W6UUS) in ARA Clubhouse during the year have been awarded trophies.

First shift winner was Russ Oexner (K6TLS), while Hal Thompson (K6ZPC) received the second shift award.

A second club contest for members making the greatest number of contacts using their own equipment was conducted with turkeys as prizes. First shift winner here was Al Levon (WA6MYC), and Stan Miller (K6SHT) won on second shift.

Explorers Club Travels South

A four-day field trip in Baja California will begin for ARA Explorers Club when the group gathers at Halfway House (midway between Tijuana and Ensenada) at 8 a.m., Dec. 30.

From there, the group will travel in convoy to San Quintin some 200 miles south on the peninsula, where they will camp near five extinct volcanoes in the vicinity of San Quintin Bay.

The area promises a variety of activities including hiking, fishing, swimming and rock hunting.

At the group's Dec. 14 meeting, guest speaker James Moriarty of Scripps Institution of Oceanography discussed archaeology for the amateur, desert survival, and identified a number of artifacts collected by club members.

Four-Day Excursion Into Snow Country Planned by Skiers

Departing San Diego Dec. 29, GD/Astro Snow Ski Club members will trek northward for a four-day mid-winter excursion to Mammoth Mountain, Lake Tahoe and June Mountain.

Plans call for skiing at various points in these vicinities as well as a New Year's Eve party at Stateline, Nevada. While most reservations are firm, interested parties may contact Gene Rockafeller, ext. 2868, for details. Ride coordinators are Hal Moore (ext. 1487) and Louis Hungate (ext. 3774).

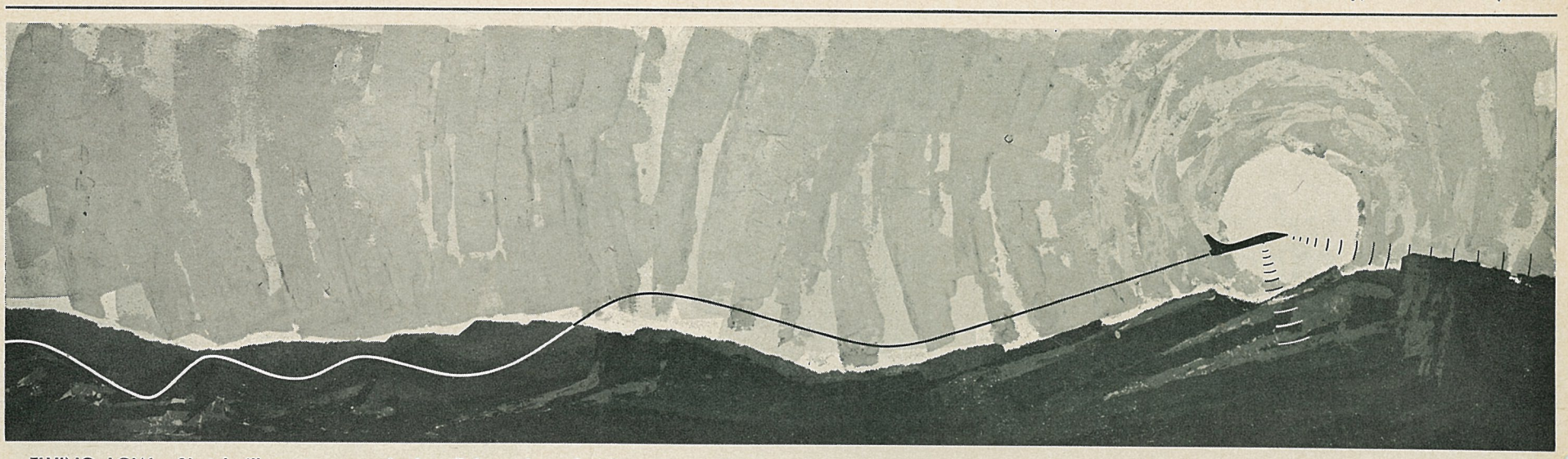
Also on tap for members is a Jan. 13-14 trip to Big Bear Lake. Final arrangements for this trip will be completed Jan. 10 at a meeting in ARA Clubhouse.

Larry Atwell, ARA commissioner, indicated social meetings will be held the third Thursday of each month throughout the ski season.

20 Prizes Offered For Bridge Party

More than 20 prizes will be awarded by random drawing to those attending ARA Bridge Club's Christmas party at 7:30 p.m., tomorrow (Dec. 21) at Barcelona Bridge Club, Fourth and Juniper.

Featured at the party will be a special master point event for bridge enthusiasts.



FLYING LOW—Sketch illustrates speedy low-flying plane holding direct flight path safe distance above all obstacles with GD/Electronics-developed system. Non-scanning antenna is "brain" of simplified electronic system designed primarily for military craft.

'Ground-Hugging' Planes Guided Over Obstacles by GD/E Device

A refined electronic flight system to guide low-flying planes safely over surface obstacles has been designed and developed by General Dynamics/Electronics Division at San Diego.

The "terrain avoidance system," as it is termed, permits "ground-hugging" flight with a safe distance maintained at all times above anything beneath. Thus, a craft can be kept on its flight path even though flying over mountain ranges, tall buildings, high-tension lines.

The simplified GD/Electronics system is designed primarily for military aircraft, explained J. E. Bowen, GD/Electronics product manager of airborne radar and terrain avoidance. However, it can be adapted for commercial use, he said.

"It will be most valuable to high-speed military planes required to fly at extremely low altitudes of a few hundred feet to avoid enemy radar and surface-to-air missiles," Bowen continued. "Also, the system can guide the pilot in foul weather landings and takeoffs, during night missions, or over unfamiliar terrain."

Bowen heads a team of marketing specialists presently contacting various branches of the military in a sales effort which would allow full-scale production of the new electronics system.

A flyable system now is being fabricated as a development model for demonstration, said J. L. Brooks, chief engineer for airborne radar, responsible for the system's development. It is due for flight test in early 1962.

Heart of GD/Electronics' terrain avoidance system is a nonscanning antenna, eliminating complex mechanisms and computations, explained Roger Olson, systems engineer in charge of the project during its later stages.

Entire system consists of a forward-looking radar, radio altimeter, electronic analog computer which provides either a pilot display or automatic control.

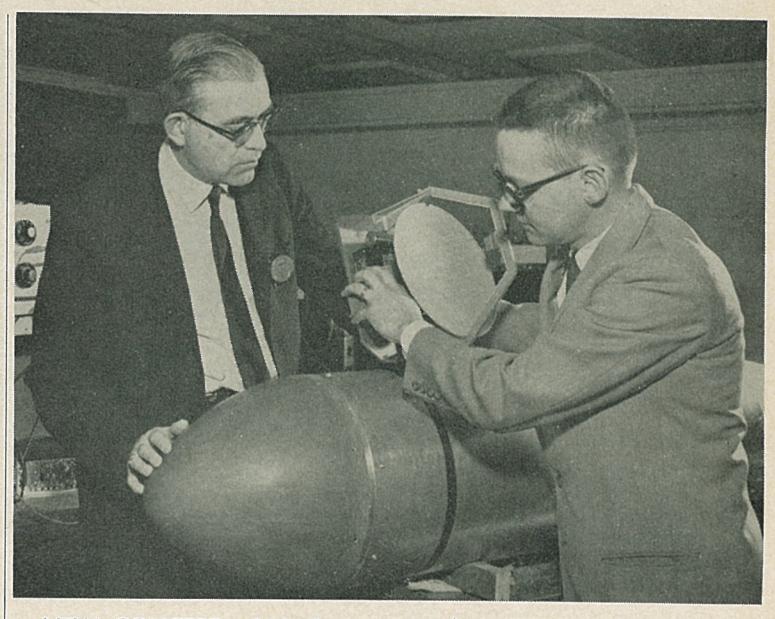
Electronic components are housed in aluminum pods, approximately 14 inches in diameter and six feet long. One pod is positioned on the underside of each wing.

"The system will enable a high-speed craft to fly safely at very low altitude," said Olson. "However, mission requirements and type of terrain will dictate the height the pilot chooses to maintain above the ground.

"The system is now ready to go on present high-speed craft, but looking to the future, it will perform equally well on planes not yet built, which will fly supersonically at low altitudes."

First studies on such an obstacle avoidance system began several years ago within the former electronics engineering section of GD/Convair. Present project which culminated in a workable system this fall, was initiated within GD/Electronics.

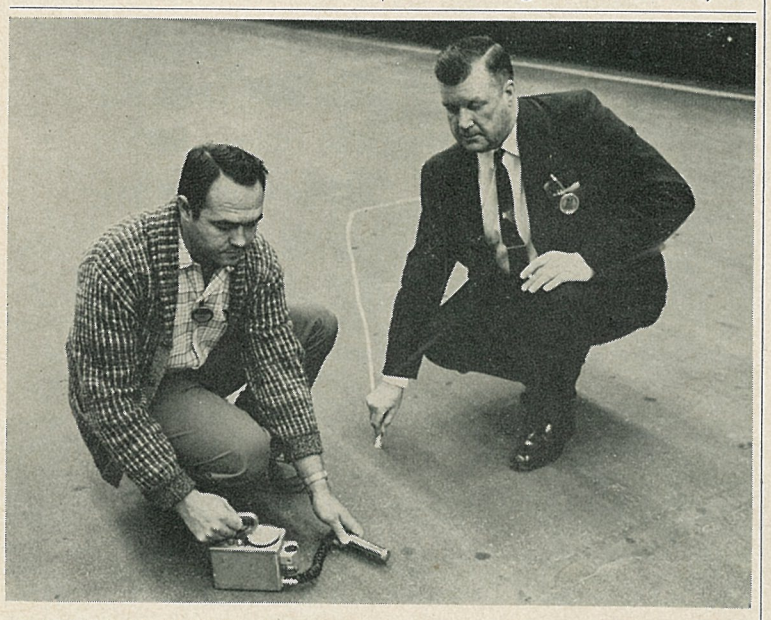
Team assigned to development and fabrication includes James Boelens, detectors and automatic gain control circuits; Mitsuo Ishihara, computer, indicator, and power supplies; Steven Molnar, microwave; James Williams, antenna; Fred Knight, servos and transducers; MacDonald Nelson, mechanical design.



NEW CONCEPT—J. L. Brooks, GD/Electronics-San Diego chief engineer for airborne radar, and Roger Olson, systems engineer, examine antenna of recently-developed terrain avoidance system. Note aluminum pod to house GD/Electronics flight system.

Personnel Officers Hear Magers of FW

E. L. Magers of GD/Fort Worth's Dept. 3 addressed the annual Conference of Systems Personnel Officers of the University of Texas and its branches recently.



ATOMS AT WORK—Health Physicist Joe Hall uses Geiger counter to follow path of radioactive isotope moving through underground pipe line. Dept. 25 General Foreman G. S. Dean traces path with chalk.

'Lost' GD/Fort Worth Sewer Line Traced With Ease, Using Isotope, Geiger Counter

They've found another "peaceful use for atomic energy" at GD/Fort Worth.

After installing a new sink in a test lab facility, workmen sought to link the sink to an existing sewer line. Working with a 21-year-old blueprint, workmen dug four feet underground. But the sewer line wasn't there. The blueprint was off.

G. S. Dean, general foreman construction, called Joe Hall of health physics, for a Geiger counter and radioactive isotope.

The isotope, attached to a long wire, was pushed down the sewer line. As it moved along Hall traced its route with his Geiger counter.

Health Physics Administrator F. L. Paschal Jr. admits the application was novel at GD/Fort Worth, though Hall had predicted the possibility two years ago in an Employee Suggestion.

Do You Hear Me?

System For Voice Warnings To Pilot Introduced in B-58

A dulcet female voice breaks the silence of a B-58 pilot's cockpit to announce: "Left manifold pressure low."

The tape-recorded message continues at intervals until either the pilot makes an adjustment or the situation corrects itself.

Twenty such "caution messages," connected to 50 inputs from vital areas in the B-58, form the Hustler's new voice warning system (VWS). The system supplements the airplane's existing light warning system, conveying the warning vocally instead of visually.

Purpose of the new system, slated for installation on production Hustler No. 103 and on, is to shorten the pilot's reaction time to existing problems.

"Lights which warn the pilot of an existing problem in from 30 to 40 areas appear on a panel to the pilot's right," explained W. L. Gappa, senior aerosystems engineer. "A master caution light on the center panel directly in front of the pilot also comes on whenever warning occurs.

"The voice warning will simply supplement these existing warning devices. We know that in some cases, especially when the pilot is concentrating on some particular phase of flying, he might well hear the voice before he sees the lights."

If the pilot hears the voice warning, "Left manifold pressure low," for example, before seeing the warning light, he might save precious seconds in taking corrective action. Seconds can be crucial when the plane is traveling supersonically.

Messages are recorded in priority order, from 1 through 20. After hearing a message, the pilot may override to get the next voice warning on the list—if there is one. Otherwise, the message will continue until the problem is corrected.

Time required for the voice to "come on" after the system detects trouble is about a half second. In most instances, light and voice warnings—for all practical purposes—come at the same time.

All three stations in the B-58 receive the same message.

The VWS works at any altitude. A "landing gear unsafe" voice warning, for instance, will come on if the pilot cuts his speed too low on landing, or if he's flying too fast after takeoff with landing gear down.

Nerve center of the VWS, which uses the same switches as the light warning system, is an electronic black box about 10 by 6 inches in size.

"But the two systems operate independently," Gappa said. "If something goes wrong with one, the other will keep operating."

Nortronics Division of Northrop Corp. built the system to GD/Fort Worth specifications. They also supplied the female voice which may or may not be standard usage for subsequent messages.

J. V. Crotty, GD/Fort Worth assistant project engineer in charge of the program, recently demonstrated the system for Air Force representatives at Hawthorne, Calif.

Low-Level Pod Drop Scheduled Over Tonopah

Hustler No. 4 was to make a low-level pod drop over Tonopah Test Range this month, then fly home for Christmas.

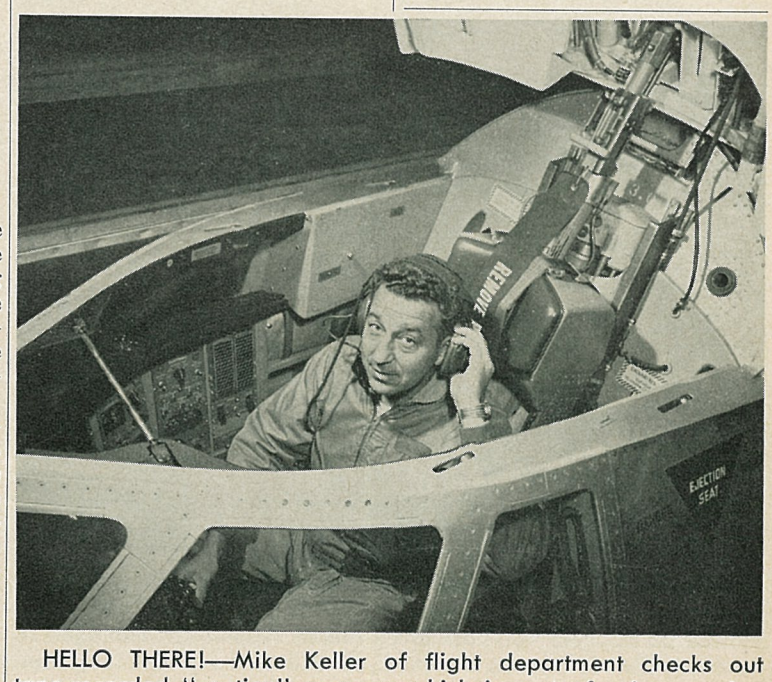
Returning for a brief period from flight headquarters at Kirtland AFB are crewmen Earl Guthrie, pilot, Grover Tate, bombardier-navigator, and O. D. Lievely, DSO.

No. 4 was scheduled to make several drops, winding up its part in the two-component pod-drop program this year.

Inclement weather caused several flight postponements for No. 42, however, and this plane is expected to end its task in January.

Hustler No. 38, the second B-58 used in TCP drops, is now being modified to carry additional bombs. The ship will be used in another drop upon completion of modification and a shakedown flight.

One of No. 4's remaining drops will be over the Salina, Kan., range, where the tank can be recovered.



HELLO THERE!—Mike Keller of flight department checks out tape-recorded "caution" message which is part of voice warning system, slated for installation soon on B-58 Hustlers. Light-warning system is on pilot's panel to his right.